Index to Volume 33

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How to Use This Index

This index is of similar form to the Cumulative Indexes of this journal, covering, respectively, Volumes 1–10, Volumes 11–20, and Volumes 21–30, and is composed of three main divisions: the Author Index to Volume 33, the Inventor Index to Acoustical Patents, Volume 33, and the Analytic Subject Index to Volume 33.

The Subject Index to Volume 33 of *The Journal of the Acoustical Society of America* lists the titles of all the papers, abstracts, and patents under thirteen section headings as follows: 0, General, Unclassified; 1, Acoustical Society of America; 2, Architectural Acoustics; 3, Books, Bibliographies, and Surveys; 4, The Ear and Hearing; 5, Applied Acoustics, Instruments and Apparatus; 6, Musical Instruments and Music; 7, Noise; 8, Standards; 9, Speech Communication; 10, Ultrasonics (Supersonics); 11, Waves and Vibrations; 12, Mechanical Vibration and Shock; and 13, Underwater Sound. Each of these sections is further divided into a considerable number of decimally numbered subjects, which are listed below under the heading, "Classification of Subjects." Each subject is divided into eight parts entitled Papers, Letters to the Editor, Abstracts, Subtitles, Patents, Book Reviews, News, and Errata. Under Papers will be found the original titles of all the papers appearing in the journal on that subject. Under Abstracts are listed the titles of the papers presented at meetings. Since a great amount of valuable material appears in the journal in papers whose titles cannot fully describe all the subjects which the papers cover, some subtitles of papers have been indexed under the heading Subtitles. When subtitles covering the material did not appear in the paper, they were written; the captions of some of the figures were also included under this heading. Thus, while the Subtitles portion of the index is informal, it is hoped that it will increase the probability of finding the desired information quickly. All patents appearing in the journal are listed under the heading Patents. New classifications are added from time to time. The year in which classifications are added appears in parentheses after the subject classes.

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Classification of Subjects

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- 0.1 Errata
- 0.2 Conferences, Lectures, and Announcements, not of the Acoustical Society
- 0.3 Nonacoustical Theories
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- 2.8 Reverberation Measuring Instruments. (See also 2.7 and 5.15.)
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3. Books, Bibliographies, and Surveys
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Bridges, Robert M., Erland W. Rudy, and James A. Rummell. 2,946,980. Sound ranging system. 33: 263—1961
Broding, Robert A., John O. Ely, and Gerald C. Summers. 2,949,973. Methods of and means for measuring travel times through earth formations. 33: 119—1961
Brody, Stanley S. 2,913,700. Supersonic deviation-measuring apparatus. 33: 1816—1961
Brower, David F. 2,927,163. Electromagnetic transducers. 33: 549—1961
Brown, Charles B. (see Paslay, LeRoy C.). 33: 1818—1961
Brown, Edgar Alan. 2,915,593. Magnetic transducer and method. 33: 121—1961
Brown, George J. 2,960,302. Flexure gimbal. 33: 722—1961
Brown, George S., Jr. (see Vanderzee, Harry Herbert). 33: 383, 825—1961
Bruant, Claude (see Meunier, Gaston). 33: 992—1961
Bruetting, Ludwig. 2,950,641. Musical tops. 33: 124—1961
Bunker, David D. 2,989,884. Stringed musical instrument. 33: 1813—1961
Burg, Kenneth E. and Edgar J. Stulken. 2,954,090. System for improving seismic records of underground strata. 33: 559—1961
Burkhard, Mahlon D. (see Corliss, Edith L. R.). 33: 721—1961
Burns, Fred P. 2,905,771. Piezoresistive semiconductor microphone. 33: 117—1961
Burns, Leslie L., Jr., and Eugene O. Keizer. 2,915,594. Magnetic recording system. 33: 122—1961
Busse, Harold M. 2,971,065. Ear insert hearing aid. 33: 824—1961
Byrd, John F. and Cataldo U. Falco. 2,972,022. Noise suppressor for theater sound reproduction. 33: 824—1961

Caddell, Alfred M. 2,942,685. Rotary temperature-reducing exhaust silencer. 33: 826—1961
Caddy, Edward William John. 2,954,981. Automatic record changing gramophones. 33: 260—1961
Cailliot, Serge (see Appert, Didier). 33: 388—1961
Calabro, Sebastian J. 2,958,251. Combination chord, interval, scale, and scale degree indicator. 33: 556—1961
Cammack, Arthur R. 2,900,453. Microphone. 33: 117—1961
Camp, Leon W. 2,961,637. Underwater transducer having a longitudinally vibratile element. 33: 828—1961
Campbell, John O. and Yee J. Liu. 2,966,552. System and apparatus for superimposing voice-time messages on signal recordings. 33: 986—1961
Camras, Marvin. 2,918,537. Apparatus for making duplicate magnetic records. 33: 388—1961
—— 2,926,220. Electromagnetic head construction. 33: 549—1961
—— 2,975,241. Means for counteracting shunt reluctance of a transducer head gap. 33: 1281—1961
Carlisle, Richard W. 2,981,359. Reflex horn loudspeaker. 33: 1276—1961
Carlson, Charles W. (see Larson, Robert H.). 33: 546—1961
Carlsson, Stig. 2,979,149. Loudspeaker apparatus. 33: 1275—1961
Carrier, Robert M., Jr., and John M. Morris. 2,947,181. Resonant vibration exciter. 33: 1817—1961
——, **and John M. Morris.** 2,947,183. Vibration imparting mechanism. 33: 1817—1961
Carruthers, Walter W. and Claude L. Kirkpatrick. 2,948,970. Sonar trainer. 33: 263—1961
Carter, Richard H. 2,958,296. Vibration isolating coupling. 33: 989—1961
Cartwright, Louis A. (see Kurie, Franz N. D.). 33: 1649—1961
Cavallo, Friedrich and Hellmuth George Martin Petzhold. 2,984,491. Record changer for talking machines. 33: 1278—1961
Cernohorsky, Jiří (see Dubský, Bořivoj). 33: 1443—1961
Chalfin, Norman Leonard. 2,977,126. Phonograph pickup arm. 33: 1277—1961
—— 2,987,575. Two-way telephone handset amplifying system. 33: 1440—1961
Chamberlin, Harry C. 2,940,351. Magnetic tape sound reproducing musical instrument. 33: 1814—1961
Chave, Donald M. 2,975,852. Loudspeakers. 33: 1275—1961
Chen, Tung Chang. 2,969,528. Read-write circuit for magnetic recording. 33: 986—1961
Cherniak, George S. 2,909,739. Transducing devices. 33: 390—1961
Chernosky, Allen A. (see Rodman, Isaac P.). 33: 1818—1961
Chervenak, John (see Bernstein, Bernard). 33: 1445—1961
Christensen, Raymond T. 2,964,596. Sound-reproducing device. 33: 545—1961
Clark, Melville, Jr. 2,941,434. Photoelectric scanning device for generating musical tones. 33: 1814—1961
—— 2,946,252. Progressively keyed electrical musical instrument. 33: 1815—1961
—— 2,946,253. Photoelectric apparatus for generating musical tones. 33: 1815—1961
Clements, Warner W. 2,948,778. Sound reproducing means. 33: 255—1961
Cleybergh, John. 2,966,358. Automatic record changer speed control. 33: 720—1961
Colbert, Charles. 2,937,241. Noise compensation means in a magnetic recorder. 33: 553—1961
Cole, Irwin H. 2,977,425. Hearing aid. 33: 1156—1961
Cole, John N. (see Von Gierke, Henning E.). 33: 1812—1961
Collett, James Daviss and Joseph Alfred Walston, III. 2,938,964. Recording apparatus. 33: 553—1961
Connell, Lawrence H. 2,941,045. Magnetic recording. 33: 554—1961
Cook, William H., Jr. 2,938,335. Noise suppressor and thrust reverser. 33: 825—1961
Corliss, Edith L. R., Mahlon D. Burkhard, and Walter Koidan. 2,968,695. System for monitoring and controlling the motion of a sound source. 33: 721—1961
Corwin, Merton D. 2,928,309. Playing key switch. 33: 1813—1961
Cottle, Francis M., Jr. 2,937,708. Sound deadening device. 33: 825—1961
Cottle, Harry N., Jr. (see McCluskey, Donald S.). 33: 723—1961
Craig, Floyd B. (see Leonard, Frederick). 33: 389—1961

Crouch, John M. 2,928,491. Sound and gas-flow control unit. **33**: 261—1961
Cullin, Hugh J. (see Dranetz, Abraham I.). **33**: 558—1961
Curtis, Gerald R. 2,969,514. Differential transducer. **33**: 1443—1961
Czarnecki, Eli D. 2,932,233. Reed organ. **33**: 1815—1961

da Costa, Harry. 2,946,595. Gramophone record changing mechanisms. **33**: 259—1961
Dale, Colin B. 2,914,620. Sound recording apparatus. **33**: 121—1961
—— 2,974,962. Automatic-indexing record changer. **33**: 1158—1961
Darner, Charles L. (see Bobber, Robert J.). **33**: 1162—1961
David, Constant V. and John W. Baxter. 2,955,418. Combination augmenter, sound suppressor and thrust reverser for jet engines. **33**: 1161—1961
De Angelo, Michael. 2,961,919. System of producing and reproducing sound motion pictures. **33**: 720—1961
De Boer, Petrus A. 2,965,377. Automatic phonograph tripping mechanism. **33**: 720—1961
De Bruyn, Johannes Wilhelmus. 2,951,913. Magnetic device for sound reproducing means. **33**: 986—1961
De Geller, Donald J. 2,927,973. Magnetic transducer. **33**: 550—1961
Dennis, James T. 2,939,714. Record changer. **33**: 257—1961
—— 2,956,830. Record changer. **33**: 260—1961
Deremer, Floyd E. 2,950,777. Silencer or muffler. **33**: 989—1961
De Vaney, Robert H. (see Hunsicker, Monroe T.). **33**: 1438—1961
Devaud, Albert J. Re. 24,850. Electrostatic tape and methods of construction. **33**: 546—1961
DeWitt, Clayton C. 2,932,522. Phonograph record. **33**: 256—1961
Dickey, Clyde W. 2,957,994. Magnetostrictive transducer. **33**: 557—1961
Dieter, Norman H., Jr. 2,953,648. Stereophonic pickup with mechanical rumble filter. **33**: 383—1961
——, **and Egon H. Bauer.** 2,955,170. Phonograph pickups. **33**: 260—1961
Di Giovanni, Mario. 2,958,056. Transducer. **33**: 1442—1961
—— 2,963,671. Transducer. **33**: 1443—1961
—— 2,981,912. Transducer. **33**: 1443—1961
Dixon, Austin and James R. Spierto. 2,984,903. Brazing alloy and ultrasonic process for using the same. **33**: 1648—1961
Dolby, Ray M. (see Ginsburg, Charles P.). **33**: 123—1961
Donceel, Jules Louis Joseph and Henri Cornelius Johannes van der Harck. 2,914,621. Electromagnetic transducer. **33**: 121—1961
Dopera, Edward E. (see Dopera, Rudolph). **33**: 1160—1961
Dopera, Rudolph and Edward E. Dopera. 2,978,945. Magnetic pickups. **33**: 1160—1961
Dranetz, Abraham I. and Hugh J. Cullin. 2,939,970. Spherical transducer. **33**: 558—1961
Drucker, Eugene E. (see Pray, Reuel Ford, III). **33**: 380—1961
Dubois, Jacques. 2,951,914. Sound recording and reproducing apparatus. **33**: 1278—1961
Dubský, Bořivoj and Oldřich Straka. 2,955,461. Electromagnetic torsional feeler. **33**: 1442—1961
——, **Oldřich Straka, Jiří Cernohorský, and Vladimír Koblížek.** 2,977,791. Torsional magnetostrictive pressure pickup. **33**: 1443—1961
Dulze, Erich (see Müller, Willy). **33**: 261—1961
Duncan, Myron G. 2,969,530. Sound monitoring circuitry and instrument. **33**: 1276—1961
Duncan, Robert K. 2,950,358. Electromechanical transducer. **33**: 118—1961
—— 2,950,360. Microphone support structure. **33**: 118—1961
Duncan, Theodore R. 2,942,888. Phonograph and tone arm. **33**: 258—1961
—— 2,942,889. Phonograph device. **33**: 258—1961
—— 2,956,466. Drive and guiding means for disk actuated music comb. **33**: 556—1961
—— 2,975,664. Music comb with weighted cantilever. **33**: 1160—1961
Dvorsky, Alexander L. 2,931,865. Microphones. **33**: 118—1961

Edema, Sjoerd. 2,959,419. Record player. **33**: 718—1961
Edwards, Philip B. (see Harris, Wilbur T.). **33**: 124—1961
Edwards, Roy Q. 2,976,047. Automatic restacking mechanism for phonograph. **33**: 1158—1961
Ellmore, Austin W. 2,941,736. Tape recorder brake mechanism. **33**: 554—1961
Ely, John O. (see Broding, Robert A.). **33**: 119—1961
Embleton, Tony F. W. (see Thiessen, George J.). **33**: 1156—1961
Engel, Ludolf and Herbert Panzer. 2,904,076. Pulsation dampener. **33**: 1812—1961
Engesser, Valentine. 2,961,692. Vibration damper for automobile doors. **33**: 990—1961
Epstein, Herman and Oscar B. Stram. 2,957,051. Mounting for magnetic heads. **33**: 1280—1961
Ernst, Josef. 2,937,707. Muffler for silencing gases. **33**: 393—1961
Esser, George W. 2,984,708. Record-reproduce phonographic system. **33**: 1278—1961
Estes, Nelson N. 2,973,739. Underwater transducer. **33**: 1445—1961
—— (see Paslay, LeRoy C.). **33**: 1818—1961
Evans, Martin E. 2,953,385. Multi-system sound recording and photographic strip. **33**: 386—1961
Everitt, Scott F. 2,992,695. Loudspeaker enclosure. **33**: 1812—1961

Fabel, George W. and Siegfried J. Zuerker. 2,984,712. Loudspeaker construction. **33**: 1276—1961
Falco, Cataldo U. (see Byrd, John F.). **33**: 824—1961
Farwell, Claude C. 2,969,848. Bass speaker enclosure. **33**: 824—1961
Faulkner, Willard J. and Jack E. Bayha. 2,979,337. Phonograph. **33**: 1159—1961
—— **and Jack E. Bayha.** 2,983,513. Change cycle delay apparatus for phonographs. **33**: 1438—1961
—— (see Morrison, James L. D.). **33**: 258—1961
Favaro, Sergio. 2,988,365. Apparatus for driving gramophone records. **33**: 1439—1961
Fawick, Thomas L. 2,974,556. End-rest foot-assembly for violoncellos, bass viols and the like. **33**: 1160—1961
Fender, Clarence L. 2,796,755. Electromagnetic pickup for lute-type musical instruments. **33**: 1282—1961
—— 2,960,900. Guitar. **33**: 721—1961
—— 2,972,923. Floating tremolo and bridge construction for lute-type musical instruments. **33**: 1160—1961
—— 2,973,682. String tension controlling means for lute-type instrument. **33**: 988—1961
Fiedler, Alexander Rudi (see Seidel, Robert Hermann). **33**: 385—1961
Fischer, Jean. 2,926,742. Acoustic paneling. **33**: 115—1961
Flaschen, Steward S. and Harold A. Sauer. 2,974,203. Ceramic electromechanical transducers. **33**: 1282—1961
Flötgen, Rudolf. 2,932,521. Phonograph records. **33**: 255—1961
Folse, Kenneth H. 2,962,560. Method of demagnetizing a magnetic record. **33**: 555—1961
Foufounis, Jean. 2,992,006. Record player. **33**: 1647—1961

Fraebel, Robert J. 2,958,487. Impact absorption device. **33**: 990—1961
Freeman, James F. 2,973,967. Transversal-phonographic machines. **33**: 1158—1961
Freiberger, Siegfried (see Reinsch, Herbert). **33**: 1647—1961
Frey, Edward J. 2,941,390. Vibration responsive mechanism for a domestic appliance. **33**: 1817—1961
Friedman, Norman. 2,949,163. Loudspeaker baffle assembly. **33**: 255—1961
Friess, Hans. 2,952,737. Magnetogram system and apparatus for picture and sound recording. **33**: 1279—1961
Fruengel, Frank. 2,908,443. Ultrasonic carburetor. **33**: 393—1961
Fryklund, Robert A. 2,963,334. Depth sound recorder. **33**: 828—1961
—— 2,982,940. Echo-ranging system. **33**: 1817—1961

Garber, Samuel M., Jr., Benjamin G. Walker, and Thomas T. True. 2,937,239. Skew servo for multiple channel recording system. **33**: 552—1961
Geloso, Giovanni. 2,901,552. Desk microphone combined with support for pen. **33**: 117—1961
Gentile, Frank. 2,946,325. Muffler for use with catalysts in internal combustion engines. **33**: 988—1961
Gernert, Lawrence H. 2,928,906. Magnetic transducing head with integral adjustment means. **33**: 550—1961
Gibel, Stephen J. 2,954,839. Muffler. **33**: 1161—1961
Gill, Frank R. 2,936,844. Combined spark arrestor and muffler for internal combustion engines. **33**: 392—1961
Gilson, Paul R. 2,969,529. Magnetic read-write head having two gaps. **33**: 1281—1961
Ginsburg, Charles P., Shelby F. Henderson, Jr., Ray M. Dolby, and Charles E. Anderson. 2,921,990. Magnetic tape system and method. **33**: 123—1961
Goldberg, Jack H. and Everett L. Goldstein. 2,966,550. Hair dryer sound system. **33**: 718—1961
Goldmark, Peter C. 2,950,116. Phonograph record. **33**: 382—1961
—— 2,974,961. Phonograph reproducer. **33**: 1158—1961
Goldstein, Everett L. (see Goldberg, Jack H.). **33**: 718—1961
Görike, Rudolf. 2,939,922. Directional microphone having a low susceptibility to shock and wind. **33**: 118—1961
Grandjot, Walter (see Müller, Willy). **33**: 261—1961
Gray, Robert B. 2,944,117. Bender type piezoelectric transducer. **33**: 259—1961
—— 2,944,118. Binaural phonograph pickup. **33**: 259—1961
—— 2,958,738. Compensating network for binaural pickup. **33**: 385—1961
Greenaway, Leonard R. (see Barnes, Frederik R.). **33**: 1441—1961
Greene, Hilliard F. 2,962,289. Phonographs. **33**: 386—1961
Gregory, James N. (see Bodine, Albert G.). **33**: 559—1961
Grib, Boris F. 2,956,242. Tuning fork oscillator. **33**: 1648—1961
Grift, Wouter and Jean Louis Roulet. 2,920,146. Magnetic recording device. **33**: 388—1961
Grunwald, Arnold P. 2,935,326. Radial phonograph pickup arm. **33**: 256—1961
—— 2,947,542. Automatic record changer and player. **33**: 381—1961
Guest, Lawrence Vincent. 2,939,464. Sound reproducing apparatus. **33**: 121—1961
—— 2,950,921. Sound reproducing apparatus. **33**: 383—1961
—— 2,984,492. Disabling mechanism for automatic phonograph. **33**: 1278—1961
Gulton, Leslie K. 2,947,887. Cooled piezoelectric accelerometer. **33**: 262—1961
Gunter, Lee, Jr., and Carl R. Anderson. 2,962,290. Phonograph pickup. **33**: 719—1961
—— (see Bauer, Benjamin B.). **33**: 257, 1438—1961
Guss, Reuben. 2,993,091. Variable dynamic infinite damping loudspeaker enclosure device. **33**: 1646—1961

Haarler, Hendrikus Gerhardus and Nico Wittenberg. 2,935,573. Recorder having visual indicator for high-frequency generator operation. **33**: 551—1961
Hackley, Reginald A. 2,979,690. Dual magnetostriction hydrophone. **33**: 1650—1961
Haerther, William W., Jr. 2,960,177. Acoustical devices. **33**: 718—1961
—— 2,962,109. Acoustical devices. **33**: 718—1961
Hagopian, Jacob J. 2,913,246. Magnetic recording surface. **33**: 386—1961
—— 2,920,379. Method of making perpendicular magnetic recording head. **33**: 547—1961
Hammond, Wardlaw M., Jr. 2,972,732. Acoustic transmitting array. **33**: 1162—1961
Hamson, Roger E. 2,964,597. Loudspeaker magnetic field structure. **33**: 718—1961
Hanchett, Miles T. (see Sharp, James M.). **33**: 391—1961
Hanert, John M. 2,933,004. Combined piano and electrical monophonic instrument. **33**: 1813—1961
—— **and Donald R. Kern.** 2,928,306. Oscillators and circuitry for a musical instrument with rapid starting characteristics. **33**: 1813—1961
Hanf, Wilhelm. 2,904,931. Sound producing device. **33**: 379—1961
Hansell, Ulf G. 2,983,988. Method of polarizing transducers. **33**: 1812—1961
Hansen, Hans Christian. 2,981,953. Magazine phonographs. **33**: 1277—1961
Hanysz, Eugene A. 2,912,583. Ultrasonic transmission testing method. **33**: 1815—1961
Harchikov, Konstantin F. 2,935,153. Dynamical muffler. **33**: 391—1961
Harker, John M. 2,937,240. Self-loading hydrodynamic bearing. **33**: 552—1961
Harris, Wilbur T. 2,947,823. Electromechanical transducer. **33**: 261—1961
—— 2,947,888. Transducer construction. **33**: 124—1961
—— 2,947,969. Elongated electroacoustic transducer with integral reinforced mounting flanges. **33**: 264—1961
—— 2,962,695. Resonant low-frequency transducer. **33**: 829—1961
—— 2,964,837. Method of transducer manufacture. **33**: 987—1961
—— 2,977,569. Detector with modulation by magnetostrictive-core acoustic transducer. **33**: 1444—1961
—— 2,978,597. Circuit element transducer. **33**: 1440—1961
—— 2,978,669. Underwater electrodynamic acoustic transducer with air-filled composite diaphragm. **33**: 1649—1961
—— 2,978,671. Electrodynamic transducer. **33**: 1649—1961
—— **and Philip B. Edwards.** 2,947,890. Transducer. **33**: 124—1961
Hartman, Herbert L. 2,961,882. Phonograph drive mechanism. **33**: 719—1961
—— 2,961,883. Phonograph drive mechanism. **33**: 719—1961
Hartsfield, William L. 2,910,539. Microphones. **33**: 117—1961
Hawkins, John N. A. 2,987,700. Differentially sensitive sonic detector. **33**: 1817—1961
Hawley, Mones E. and Elvin D. Simshauser. 2,972,018. Noise reduction system. **33**: 824—1961

Heibel, Jerome D. 2,947,821. Ceramic binaural phonograph pickup. **33**: 381—1961
Heine, Henry William. 2,934,789. Manufacture of acoustic fireproof tiles. **33**: 717—1961
Heintz, Karl O. 2,966,953. Apparatus for presenting seismic data. **33**: 1444—1961
Heitner, Manfred. 2,935,574. Resilient device for urging a magnetic record. **33**: 552—1961
Heller, Aaron. 2,994,400. Anechoic tank lining. **33**: 1817—1961
Henderson, Shelby F., Jr. (see Ginsburg, Charles P.). **33**: 123—1961
Hendry, Adolph R. 2,933,148. Engine muffler. **33**: 262—1961
Heppner, Elmor A. 2,961,497. Magnetic loudspeaker. **33**: 718—1961
Hervé, Marcel. 2,974,202. Electrostatic transducers. **33**: 1440—1961
Hickman, John S. and Gordon E. Martin. 2,958,078. Sound signaling system having a variable reluctance transmitter-condenser receiver transducer. **33**: 556—1961
Hicks, Warren G. (see Zemanek, Joseph, Jr.). **33**: 559—1961
Highberg, Axel L. 2,939,279. Jet noise suppressor. **33**: 393—.1961
—— **and John M. Tyler.** 2,935,842. Noise suppressor. **33**: 391—1961
Hobbs, Linder C. (see Leigh, John S.) **33**: 1444—1961
Hofing, Frederick H. (see Bennon, Saul). **33**: 723—1961
Hollingsworth, Maurice H. 2,930,857. Spectacles concealed hearing aid. **33**: 254—1961
—— 2,930,858. Binaural hearing-aid device. **33**: 254—1961
Hollmann, Hans E. 2,926,219. Method and apparatus for making duplicate magnetic records. **33**: 548—1961
Holmes, Paul J. 2,959,965. Transducer systems. **33**: 1442—1961
Holt, Arthur W. 2,919,314. Means for recording and/or reproducing recorded high frequency signals. **33**: 388—1961
Holub, Otto (see Müller, Willy). **33**: 118—1961
Hope, Eric S. (see Tyler, John M.). **33**: 390—1961
Hornseth, Robert L. 2,977,835. Violin. **33**: 1282—1961
Hoshino, Yasushi. 2,962,558. Apparatus for supporting a magnetic sound recording and reproducing head in a magnetic sound record reading machine. **33**: 555—1961
—— **and Minoru Sato.** 2,926,018. Apparatus for extending a magnetic sound record sheet on a magnetic sound record reading machine. **33**: 548—1961
—— **and Minoru Sato.** 2,962,559. Means for compensating a record for changes in atmospheric conditions. **33**: 555—1961
—— **and Minoru Sato.** 2,973,410. Pressing plate of a magnetic sound-record-reading machine. **33**: 1281—1961
——, **Minoru Sato, and Mamoru Namikawa.** 2,940,763. Method for setting a magnetic sound record sheet on a magnetic sound record reading machine and an apparatus therefor. **33**: 553—1961
——, **Minoru Sato, Mamoru Namikawa, and Shigezo Tochihara.** 2,924,668. Magnetic recording and reading apparatus. **33**: 548—1961
Hugel, Gérard. 2,972,482. Automatic record player. **33**: 825—1961
Hunsicker, Monroe T. and Robert H. De Vaney. 2,985,718. Apparatus for measuring psychological-physiological relationships. **33**: 1438—1961
Hupert, Julius J. and Andrzej B. Przedpelski. 2,993,090. Electrostatic speaker circuit. **33**: 1646—1961
Hutton, Philip Charles. 2,948,502. Resilient supports. **33**: 722—1961
—— 2,965,349. Flexible mountings. **33**: 990—1961
Irby, Jesse C. 2,979,150. High fidelity loudspeaker cabinet. **33**: 1275—1961
Jacoby, Abraham S. (see Berman, Leon J.). **33**: 548—1961
Jacque, James M. 2,980,811. Ceramic transducer elements. **33**: 1646—1961
Jamieson, David J. 2,927,975. Automatic reversing mechanism for a tape recorder. **33**: 550—1961
Jeffords, Joseph. 2,943,695. Silencer. **33**: 827—1961
Jenkins, John P. (see Bailey, Fred L.). **33**: 1159—1961
Johnson, Edward P. (see Balmer, Donald F.). **33**: 384—1961
Johnson, Erdman H. 2,927,494. System for classroom instruction in playing keyboard-type musical instruments. **33**: 1813—1961
Johnson, Frithiof V. 2,942,475. Acceleration responsive device. **33**: 126—1961
Johnson, Philip C. 2,964,986. Push-button chord derivation and apparatus. **33**: 721—1961
Johnson, Wayne R. 2,919,313. Low noise preamplifier. **33**: 379—1961
Jones, Ulisses M. 2,941,737. Automatically reversing tape player. **33**: 554—1961
Joy, Ivan L. 2,913,602. Method and means for transmitting elastic waves. **33**: 1816—1961
Jung, Werner. 2,990,455. Control arrangement for the stereo head of a tape recorder. **33**: 1647—1961
Junger, Miguel C. (see Zaldastani, Othar). **33**: 115—1961
Junkermann, Wolfgang. 2,945,459. Pulsating combustion method and apparatus. **33**: 988—1961
Justus, Edgar J. 2,911,042. Suction roll silencer. **33**: 379—1961
Kalfaian, Meguer V. 2,921,133. Phonetic typewriter of speech (responsive to all voices). **33**: 262—1961
Kallmann, Heinz E. 2,936,342. Sound reproducing head. **33**: 552—1961
Kaprelian, Edward K. (see Schwartz, Morris). **33**: 718—1961
Karpchuk, Sylvester. 2,946,218. Tunable pickup. **33**: 1817—1961
Katella, Albert J. 2,975,243. Transducers. **33**: 1275—1961
Keizer, Eugene O. (see Burns, Leslie L., Jr.). **33**: 122—1961
Kelly, Paul Vincent and Edward R. McKee. 2,983,518. Pickup cartridge and stylus supporting nosepiece therefor. **33**: 1439—1961
Kennedy, David F. 2,978,543. Sound reproducing apparatus. **33**: 1276—1961
Kern, Donald R. (see Hanert, John H.). **33**: 1813—1961
Kesel, Robert E. (see Macleish, Kenneth G.). **33**: 125—1961
Kidd, Marshall C. 2,946,858. Convertible self-biasing amplifying circuit for magnetic recording or reproducing. **33**: 555—1961
King, Karl G. 2,958,529. Attachment for phonographs. **33**: 546—1961
Kirkpatrick, Claude L. (see Carruthers, Walter W.). **33**: 263—1961
Kissinger, Charles W. (see Perls, Thomas A.). **33**: 991—1961
Klein, Frederick J. 2,983,517. Phonograph tone arm. **33**: 1439—1961
Klemp, Hans-Joachim (see Redlich, Horst). **33**: 386—1961
Kleve, Robert Elick. 2,964,593. Sound recording and reproducing apparatus. **33**: 720—1961
Klingener, Harry F. Re. 24,968. Phonograph pickups. **33**: 1157—1961
Knecht, Emil. 2,952,160. Record changer. **33**: 383—1961

Knowles, Hugh G. 2,966,558. Transducer and vibratory diaphragm. **33**: 1159—1961
Koblížek, Vladimír (see Dubský, Bořivoj). **33**: 1443—1961
Kock, Winston E. 2,912,061. Apparatus for utilization of higher-order acoustic waves. **33**: 1816—1961
Koenig, Joost (see Larson, Robert H.). **33**: 546—1961
Koidan, Walter (see Corliss, Edith L. R.). **33**: 721—1961
Kokesh, Frank P. 2,959,241. Apparatus for investigating earth formations. **33**: 560—1961
Koren, Heiman W. 2,920,149. Magnetic record transducing heads. **33**: 547—1961
Kornei, Otto. 2,917,589. High efficiency magnetic recording and reproducing head. **33**: 387—1961
Krahulec, Frank. 2,987,320. Record-changing phonograph. **33**: 1439—1961
Krahulec, Fred. 2,939,715. Phonograph record player. **33**: 257—1961
Krause, Mitchell F. (see Stevens, Paul M.). **33**: 991—1961
Kritz, Jack. 2,903,885. Ultrasonic densitometer. **33**: 393—1961
—— 2,912,856. Electroacoustic flowmeter. **33**: 1815—1961
Kühn, Hans-Robert. 2,979,573. Transducer devices for stereophonic grooved sound records. **33**: 1159—1961
Kuhnert, Rudolf and Johannes Viehbach. 2,988,954. Magazine-type device for magnetically recording and/or transmitting sound in synchronous operation with a separate device for taking or projecting motion pictures. **33**: 1812—1961
Kurie, Franz N. D. and Louis A. Cartwright. 2,978,668. Expendable echo sounder. **33**: 1649—1961

Ladd, John. 2,959,645. Hearing aid. **33**: 379—1961
Lange, Stanley W. 2,937,877. Tone arm with straight line motion. **33**: 120—1961
Larson, Robert H., Charles W. Carlson, and Joost Koenig. 2,960,005. Sound slide film machine. **33**: 546—1961
Lee, James Alexander. 2,953,382. Plural-speed gramophones. **33**: 384—1961
Lehman, Francis H. 2,952,739. Hands-free telephone support. **33**: 261—1961
Lehr, Philip N. 2,975,244. Carrier for ear level hearing aid. **33**: 1156—1961
Leigh, John S. and Linder C. Hobbs. 2,977,570. Electronic commutator for sonar systems. **33**: 1444—1961
Leilich, Hans-Otto G. 2,939,920. Magnetic heads for recording and reproducing signals. **33**: 553—1961
Leistritz, Hans Carl. 2,926,745. Pressure converters for noise-generating gases. **33**: 261—1961
Lemelson, Jerome H. 2,988,848. Noisemaking toys. **33**: 1812—1961
Leonard, Frederick and Floyd B. Craig. 2,906,972. Magnetostrictive resonator mounting. **33**: 389—1961
Levy, Sidney E. 2,904,632. Stereophonic sound propagation system. **33**: 380—1961
—— **and Bernard C. Sharp.** 2,957,054. Transducer. **33**: 255—1961
Lincoln, James P. (see Sharp, James M.). **33**: 391—1961
Lindgren, Nils Kauri. 2,982,554. Arrangement in tone arms for gramophones. **33**: 1438—1961
Lindsay, Harold W. (see Selsted, Walter T.). **33**: 123—1961
Lingenbrink, Hermann E. F. C. 2,937,027. Phonograph apparatus. **33**: 256—1961
Liu, Yee J. (see Campbell, John O.). **33**: 986—1961
Loeffelholz, Oscar M. 2,984,141. Accordion converter. **33**: 1282—1961
Loewe, Siegmund and Werner Zorn. 2,912,763. Tape length indicator, more particularly for magnetic sound tapes. **33**: 547—1961
—— **and Werner Zorn.** 2,946,859. Magnetic recording heads. **33**: 555—1961
Logsdon, Maxon A. (see Tyler, John M.). **33**: 390—1961
Loose, Winfield W. 2,969,239. Phonograph apparatus. **33**: 824—1961
Lorenz, Alfred E. 2,970,841. Magnetic transducer head. **33**: 1281—1961
Lowell, Benjamin B. 2,982,372. Loudspeaker baffle having improved low frequency reproduction characteristics. **33**: 1276—1961
Lubkin, Samuel. 2,928,907. Multiple magnetic head unit. **33**: 550—1961
Lubkin, Yale Jay. 2,932,818. Acoustic material sensing apparatus. **33**: 116—1961
Lybarger, Samuel F. 2,983,797. Hearing aid. **33**: 1437—1961
Lyon, William H. 2,915,595. Dual channel magnetic tape recorder. **33**: 122—1961
—— **and Louis E. Nagy.** 2,915,596. Coated sheet magnetic recorder. **33**: 122—1961
—— (see Balmer, Donald F.). **33**: 384—1961

Macleish, Kenneth G. and Robert E. Kesel. 2,944,783. Optical mounting device. **33**: 125—1961
Madison, William G. (see Zimmerman, Samuel P.). **33**: 1812—1961
Maier, Karl W. 2,948,526. Buffer device. **33**: 125—1961
—— 2,948,529. Buffer device. **33**: 126—1961
Manley, Fred A. 2,922,851. Loudspeakers. **33**: 116—1961
Mantell, Cornelius, Jr. 2,938,732. Disk record cleaning service. **33**: 120—1961
Manuel, James B. 2,987,029. Sonar two bar extension. **33**: 1818—1961
Maples, Richard E. 2,950,069. Tape recorder control mechanism. **33**: 985—1961
Markowitz, Jerome. 2,939,359. Circuit for tuning oscillators of an electronic musical instrument. **33**: 1814—1961
Marks, Philip W. 2,954,234. Record player. **33**: 384—1961
Marshall, Thomas Stewart. 2,983,796. Moving coil pickups for phonographs and the like. **33**: 1278—1961
Marteleur, Carl. 2,916,559. Magnetic recording and reproducing device. **33**: 123—1961
Martin, Clarence W. 2,939,921. Magnetic recording mechanism for selective skew recording. **33**: 553—1961
Martin, Gordon E. (see Hickman, John S.). **33**: 556—1961
Mason, Warren P. 2,906,973. Electrostrictive ceramics comprising a principal component of barium titanate. **33**: 390—1961
—— **and Robert N. Thurston.** 2,906,971. Torsional vibrational wave filters and delay lines. **33**: 394—1961
Matheny, James L. (see Miller, Meral O). **33**: 392, 826—1961
Mathews, Robert L. (see Smith, Cloyd D.). **33**: 393—1961
Mathez, Robert. 2,916,560. Sound head of a magnetic tape recorder. **33**: 123—1961
Matteo, Ralph. 2,969,703. Guitar tailpiece. **33**: 987—1961
Maxim, Andrew. 2,949,308. Record player. **33**: 382—1961
May, John E., Jr. 2,965,851. Tapped ultrasonic delay line. **33**: 989—1961
McCarrell, Stuart G. 2,962,562. Hearing aids. **33**: 545—1961
McCarter, Ed R. 2,952,006. Attenuation of seismic signals. **33**: 559—1961
McCluskey, Donald S. and Harry N. Cottle, Jr. 2,945,968. Mounting system for the moving element of a vibration table exciter. **33**: 723—1961
McCoy, Robert E. 2,941,170. Motion transducer. **33**: 1441—1961
McDonald, Clifford C. (see Miller, Rowland L.). **33**: 1646—1961

McGuckin, Glenn M. 2,958,949. System for measuring the use of a phonograph needle. **33**: 546—1961
McGunigle, Richard D. 2,947,886. Piezoelectric ultrasonic transducer. **33**: 556—1961
McKee, Edward R. (see Kelly, Paul Vincent). **33**: 1439—1961
McKellar, John D. 2,960,316. Fluid driven vibrator. **33**: 991—1961
McKenney, Vaughn G. 2,981,927. Underwater sound transmitter. **33**: 1649—1961
McLafferty, George H. 2,938,334. Supersonic inlet. **33**: 825—1961
McMichael, John D. 2,954,091. Cleaner silencer assembly. **33**: 1161—1961
McMillan, Edwin M. 2,960,175. Laminated acoustic window. **33**: 394—1961
McMullen, Wesley W. 2,954,096. Air-cleaner-silencer assembly. **33**: 1161—1961
McNabb, Louis A. (see Posen, Sam). **33**: 254—1961
Melhose, Alfred E. 2,975,398. Hydrophone. **33**: 1445—1961
Meola, Edward F. 2,961,912. Pick for metallic stringed instruments. **33**: 721—1961
Meoni, Nello. 2,972,484. Pickup arm. **33**: 1157—1961
Merchant, Charles J. 2,964,988. Toy musical instrument and actuating mechanism therefor. **33**: 721—1961
Merten, Eugen. 2,953,214. Seismic exploration. **33**: 560—1961
Mertes, Leo. 2,977,127. Device for cleaning phonograph records, particularly synthetic resin phonograph records. **33**: 1277—1961
Meunier, Gaston and Claude Bruant. 2,965,876. Compensated sonic echo ranging system. **33**: 992—1961
Meyer, Franklin. 2,948,152. Accelerometer. **33**: 1441—1961
Meyer, Richard C. 2,938,731. Tape recorders. **33**: 553—1961
Michell, William P. 2,945,367. Torsional vibration dampener. **33**: 722—1961
Michonski, Edward J. (see Albright, Robert B.). **33**: 259—1961
Miessner, Benjamin F. 2,932,231. Tone-generating apparatus. **33**: 1813—1961
Millard, John S. (see Black, William A.). **33**: 720—1961
Miller, Harry B. 2,930,912. Composite electromechanical transducer. **33**: 1648—1961
—— 2,989,725. Electroacoustic transducer. **33**: 1819—1961
Miller, Laymon N. 2,984,819. Magnetostrictive transducer. **33**: 1819—1961
Miller, Meral O. and James L. Matheny. 2,936,845. Muffler and collecting ring assembly for radial engines. **33**: 392—1961
——, **James L. Matheny, and Raymond L. Scott.** 2,938,593. Combination sound-deadening and gas-purifying apparatus. **33**: 826—1961
Miller, Rowland L. and Clifford C. McDonald. 2,993,557. Omnidirectional stereo system. **33**: 1646—1961
Miller, Theadore. 2,987,699. Homing-torpedo reverberation-attenuating transducer apparatus. **33**: 1818—1961
Miquelis, Eugène (see Aubert, Maurice). **33**: 823—1961
Moehring, William D. 2,950,355. Magnetic head assembly. **33**: 985—1961
—— **and Charles F. Murphy.** 2,931,864. Colinear double channel magnetic recorder and reproducer head. **33**: 551—1961
Mohrlant, Victor A. 2,969,203. Magnetic recording tape reel. **33**: 986—1961
Moore, Frank L. (see Thomas, Philip J.). **33**: 1157—1961
Moore, William T. 2,955,827. Guide means for phonograph needle. **33**: 385—1961
Moorman, Edward W. (see Noyes, Howard). **33**: 1438—1961
Morgan, Adolph R. 2,920,140. Electrostatic microphone circuits. **33**: 117—1961
—— 2,963,681. Dual magnetostrictive microphone. **33**: 992—1961
Morgan, Conrad J. 2,949,164. Portable sound suppressors for aircraft jet engines. **33**: 989—1961
Morgan, Porter S. 2,985,059. Phonograph record for praxinoscopic devices. **33**: 1647—1961
Morley, Frederick William Walton. 2,944,624. Jet noise suppressor nozzle. **33**: 988—1961
Morris, John M. (see Carrier, Robert M., Jr.). **33**: 1817 (2 patents)—1961
Morrish, Leonard M. and Lloyd E. Muller. 2,949,165. Muffler. **33**: 989—1961
Morrison, James L. D. 2,950,920. Automatic phonographs. **33**: 383—1961
—— **and Willard J. Faulkner.** 2,942,890. Phonograph pickup assembly. **33**: 258—1961
—— **and Robert L. Van Antwerp.** 2,959,420. Needle selecting mechanism. **33**: 719—1961
Mott, Edward E. 2,977,573. Pressure compensated underwater transducer. **33**: 1446—1961
Moyer, Golden A. 2,942,683. Gas intake silencer. **33**: 826—1961
Mueller, Herman H. 2,949,307. Selective record lowering, lifting, and releasing means for automatic interlocking and conventional record players. **33**: 381—1961
—— 2,949,310. Record support and drive means. **33**: 382—1961
Muller, Lloyd E. (see Morrish, Leonard M.). **33**: 989—1961
Muller, Max Adolf. 2,942,872. Spring for cushioning purposes in vehicles. **33**: 558—1961
Müller, Willy. 2,928,908. Microphone with an adjustable attenuator. **33**: 118—1961
——, **Walter Grandjot, Erich Osterloh, Gunter Werner, and Erich Dulze.** 2,942,876. Recording and reproducing apparatus. **33**: 261—1961
—— **and Otto Holub.** 2,933,566. Hand microphone for sound transducing appliances. **33**: 118—1961
Munroe, David J. 2,920,148. Recorder-reproducer apparatus. **33**: 388—1961
—— 2,953,312. Recorder-reproducer. **33**: 1279—1961
Murdoch, Colin D. 2,926,861. Magnetic sound recording apparatus. **33**: 549—1961
Murphy, Charles F. (see Moehring, William D.). **33**: 551—1961
Musser, Clair Omar. 2,975,666. Stringed musical instruments having a plastic housing. **33**: 1160—1961

Nafius, Verner H. 2,926,982. Means for positioning and protecting a magnetic head of a magnetic recorder. **33**: 549—1961
Nagy, Louis E. (see Lyon, William H.). **33**: 122—1961
Naiman, Mark and Howard Schwartz. 2,947,592. High frequency magnetic transducers. **33**: 985—1961
Namenyi-Katz, Laszlo. 2,906,611. Tape recorders. **33**: 555—1961
—— 2,923,779. Electromagnetic recording heads. **33**: 548—1961
Namikawa, Mamoru (see Hoshino, Yasushi). **33**: 548, 553—1961
Nelson, Charles E. 2,928,492. Exhaust muffler. **33**: 262—1961
Neumann, Georg (see Redlich, Horst). **33**: 386—1961
Neumann, Helmut. 2,933,565. Magnetic transducers. **33**: 551—1961
—— 2,945,919. Ferrite magnetic heads. **33**: 555—1961
—— (see Rosenberger, Georg). **33**: 388—1961

Newton, Harold B. 2,953,052. Electronic acoustical stringed instrument. 33: 391—1961
Niederman, Bernard. 2,905,909. Electromechanical filter. 33: 380—1961
Noble, Stuart D. 2,960,578. Polarized vibration recording medium and system therefor. 33: 386—1961
Nolle, Alfred Wilson (see Rodman, Isaac P.). 33: 1818—1961
Nordegren, Sven-Ake. 2,945,970. Vibrators, more particularly an immersion vibrator. 33: 263—1961
Nowak, Klaus Frederick. 2,929,462. Muffler for internal combustion engines. 33: 262—1961
Noyes, Howard and Edward W. Moorman. 2,977,426. Ear pad. 33: 1438—1961
Nulton, John H., Jr., and James R. Shoaf. 2,980,766. Balance indicator for stereophonic sound systems. 33: 1276—1961
Nye, Robert Glen, George A. Brettell, Jr., and Laurel T. Apple. 2,969,599. Group trainer for operators of echo-ranging equipment. 33: 1162—1961

Obermajer, Vladimir. 2,948,401. Anti-vibratory suspension for centrifugally drying washing machine. 33: 125—1961
Olson, Harry F. 2,964,272. Vibration control apparatus. 33: 990—1961
—— **and John Preston.** 2,870,856. Acoustic apparatus. 33: 116—1961
Olthuis, Eugene G. 2,927,380. Noise reducing arrangement for use in clothes dryers. 33: 125—1961
Oncley, Paul B. 2,933,697. Electronic musical instrument having voltage sensitive frequency variation means. 33: 1814—1961
O'Neill, James P. 2,946,981. Sonic transducers for fluid mediums. 33: 124—1961
Oopa, David. 2,960,901. Tuning means for stringed instruments. 33: 721—1961
Osburn, John G. 2,960,189. Vibration dampener. 33: 1817—1961
Osterloh, Erich (see Müller, Willy). 33: 261—1961
Overland, Bernard O. 2,946,395. Muffler repair kit. 33: 827—1961
Overton, William C., Jr. Re. 24,931. Acoustic well logging with end shielding. 33: 992—1961

Padberg, Louis R., Jr. 2,961,638. Magnetostrictive electro-acoustical transducer. 33: 828—1961
Painter, Giles Warren. 2,955,795. Resilient mounting. 33: 558—1961
Palo, Maurice M. 2,957,052. Phonograph stylus and holder therefor. 33: 261—1961
Panzer, Herbert (see Engel, Ludolf). 33: 1812—1961
Parks, Walter J. 2,962,254. Rubber mounting unit. 33: 990—1961
Parrack, Alvin L. 2,960,176. Apparatus related to seismic exploration. 33: 560—1961
Paslay, LeRoy C., Charles B. Brown, and Nelson N. Estes. 2,983,901. Crystal hydrophone. 33: 1818—1961
Passa, Frank. 2,971,422. Tailpiece retainer for stringed instruments. 33: 1160—1961
Pear, Charles B., Jr. 2,977,422. Web transport speed control. 33: 987—1961
Pearson, Harry A. 2,951,915. Playback system for stereophonic records with mechanical rumble filter. 33: 383—1961
Peek, Robert Lee, Jr. 2,978,670. Compressional wave translating device. 33: 1649—1961
Pence, Elbert A., Jr. (see Bigbee, Claude R.). 33: 1162—1961
Perello, Ramon Ubeda. 2,967,912. Device for stereo-reproduction of sound registered on cinematograph films. 33: 720—1961
Perkins, J. Carter, Jr. 2,986,229. Loudspeaker enclosures. 33: 1438—1961
Perls, Thomas A. and Charles W. Kissinger. 2,958,216. Resonant-beam calibrator. 33: 991—1961
Perry, Charles A. 2,949,663. Method of assembly of a loudspeaker. 33: 255—1961
—— 2,950,359. Loudspeaker assembly. 33: 255—1961
Peterson, Raymond A. 2,947,377. Well-shooting system. 33: 119—1961
Peterson, Richard H. 2,906,157. Keying means for the selective control of a tone. 33: 391—1961
Petzhold, Hellmuth George Martin (see Cavallo, Friedrich). 33: 1278—1961
Pierson, Arnold A., Floyd E. Smithberg, and Michael C. Supitilov. 2,951,127. Magnetic recording and reproducing machine. 33: 985—1961
Pinski, Stanley M. 2,973,824. High fidelity speaker apparatus. 33: 1275—1961
Piragino, Renato. 2,959,437. Resilient bearing. 33: 1816—1961
Poehler, Horst Albin. 2,958,250. Musical instrument tuning apparatus. 33: 1645—1961
Pollack, Hyman. 2,956,184. Transducer. 33: 558—1961
Poole, Forrest R. (see Wadsworth, William B.). 33: 1438—1961
Pope, Thomas J. 2,977,572. Hydrophone. 33: 1445—1961
Popkin, Gary S. 2,961,913. Tuning attachment for stringed instruments. 33: 721—1961
Porter, Donald S. 2,959,085. Adjustable nut for fretted stringed musical instruments. 33: 557—1961
Porter, Vincent J. 2,910,656. Terminations for acoustic delay lines. 33: 379—1961
Posen, Sam and Louis A. McNabb. 2,952,748. Binaural eyeglass hearing aid construction. 33: 254—1961
Poulos, Ernest N. 2,934,889. Noise abatement means. 33: 825—1961
Powers, Walter H. 2,934,161. Muffler. 33: 262—1961
Pray, Reuel Ford, III, and Eugene E. Drucker. 2,960,577. Tape ad mechanism for juke box. 33: 380—1961
Preston, John (see Olson, Harry F.). 33: 116—1961
Price, James F. 2,966,657. Acoustic direction finder. 33: 1156—1961
Pritchard, Peter E. 2,937,243. Phonograph armature and stylus assembly. 33: 119—1961
Proctor, Barton A. 2,933,319. Sound recording and reproducing apparatus. 33: 551—1961
Przedpelski, Andrzej B. (see Hupert, Julius J.). 33: 1646—1961

Raymond, Francois Henri. 2,966,666. Magnetic record and/or playback heads and control arrangement therefor. 33: 1280—1961
Redfield, George E. 2,943,861. Multi-speed phonograph record player. 33: 258—1961
Redlich, Horst. 2,963,556. Apparatus for sound recording. 33: 546—1961
—— 2,977,424. Arrangement for producing a sound recording. 33: 1159—1961
——, **Hans-Joachim Klemp, and Georg Neumann.** 2,962,-561. Method and apparatus for dual sound track recording. 33: 386—1961
Reinsch, Herbert and Siegfried Freiberger. 2,985,060. Sound projector arrangement. 33: 1647—1961
Rettinger, Michael. 2,915,812. Method of constructing magnetic heads. 33: 386—1961

Rice, Lyman A. 2,951,674. Shockproof mounting. **33**: 126—1961
Rice, Robert B. 2,974,743. Method of seismic prospecting. **33**: 1444—1961
Rice, Warren A. 2,955,669. Triplanal speaker enclosure. **33**: 255—1961
Richardson, Francis (see Albright, Robert B.). **33**: 259—1961
Rietzel, Heinz Hugo Wilhelm (see Seidel, Robert Hermann). **33**: 385—1961
Riggs, John H. 2,949,309. Selector device for automatic phonographs. **33**: 382—1961
Ristau, Alfred G. and Arnold E. Ristau. 2,979,336. Turntables and driving mechanisms for automatic record-changing phonographs. **33**: 1159—1961
Ristau, Arnold E. (see Ristau, Alfred G.). **33**: 1159—1961
Ritchie, Luther R. 2,988,946. Pickup means for stringed instruments. **33**: 1440—1961
Robson, Eric Richard. 2,959,643. Magnetic erase head. **33**: 1280—1961
Rockwell, Gaynor O. 2,962,697. Directional locator for origin of fluid borne vibrations. **33**: 828—1961
Rodgers, William L. 2,972,483. Tone arm lifter for phonographs. **33**: 1157—1961
Rodman, Isaac P., Alfred Wilson Nolle, Allen A. Chernosky, and Leon G. S. Wood. 2,987,698. Indicating a selected target echo in an echo wave train obtained by echo ranging. **33**: 1818—1961
Roman, Alfred I. 2,960,301. Vibration and impact isolator. **33**: 722—1961
Rose, John F. 2,991,333. Acoustical device. **33**: 1645—1961
Rosenberger, Georg and Helmut Neumann. 2,919,312. Magnetic heads. **33**: 388—1961
Rosenhagen, William (see Vegliante, Donald E.). **33**: 256—1961
Ross, James. 2,991,331. Static electricity eliminator and conditioner for phonograph record disks. **33**: 1647—1961
Roulet, Jean Louis (see Grift, Wouter). **33**: 388—1961
Rudy, Erland W. (see Bridges, Robert M.). **33**: 263—1961
Rummell, James A. (see Bridges, Robert M.). **33**: 263—1961
Runge, Frank E. and Donald F. Balmer. 2,891,131. Hand microphone. **33**: 116—1961
—— (see Balmer, Donald F.). **33**: 384—1961

Sampson, Robert C. 2,942,843. Blade vibration damping structure. **33**: 722—1961
Sampson, Sidney O. 2,952,746. Automatic dual reproducing head for tape recording device. **33**: 1279—1961
Sato, Minoru (see Hoshino, Yasushi). **33**: 548 (2 patents), 553, 555, 1281—1961
Sauer, Harold A. (see Flaschen, Steward S.). **33**: 1282—1961
Scherer, Karl. 2,950,643. Accordion. **33**: 125—1961
Schmidt, Lothar M. and Harold L. Schwartz. 2,924,669. Endless tape memory system. **33**: 545—1961
Schmuk, Rudolph H. 2,959,240. Geophysical prospecting apparatus. **33**: 560—1961
Schneiter, Henry J. (see Stewart, Basil O.). **33**: 115—1961
Schubring, Norman W. 2,912,854. Ultrasonic surface testing device. **33**: 1815—1961
Schueler, Hassan E. 2,958,332. Ultrasonic cleaning apparatus basket assembly. **33**: 722—1961
Schuyler, Ralph A. 2,912,179. Magnetic sound recording machine. **33**: 121—1961
Schwartz, Harold L. (see Schmidt, Lothar M.). **33**: 545—1961
Schwartz, Howard (see Naiman, Mark). **33**: 985—1961
Schwartz, Morris and Edward K. Kaprelian. 2,961,922. Combined photographic transparency and sound track carrier support frame. **33**: 718—1961
Schwarzbaur, Julius. 2,927,493. Piano flanges. **33**: 1812—1961
Schweitzer, Fritz L., Jr. 2,937,242. Dual-stylus phonograph pickup. **33**: 119—1961
Scott, Raymond L. (see Miller, Meral O.). **33**: 826—1961
Scully, Lawrence J. 2,948,783. Cutter control means for cutting recording grooves. **33**: 381—1961
Sears, James G. 2,959,746. Tuning fork frequency standard having a blocking coil in energizing circuit. **33**: 1648—1961
Seeler, Charles E. (see Bauer, Benjamin B.). **33**: 257, 1438—1961
Seidel, Robert Hermann, Heinz Hugo Wilhelm Rietzel, and Alexander Rudi Fiedler. 2,960,340. Automatic record changer for phonographs. **33**: 385—1961
Selsted, Walter T. 2,969,200. Magnetic tape apparatus. **33**: 1281—1961
—— **and Harold W. Lindsay.** 2,921,143. Multiple channel head assembly. **33**: 123—1961
Serrell, Robert. 2,921,989. Magnetic recording. **33**: 123—1961
Sharp, Bernard C. (see Levy, Sidney E.). **33**: 255—1961
Sharp, James M., Miles T. Hanchett, James P. Lincoln, and Henry W. Simpson. 2,936,041. Pulsation dampening apparatus. **33**: 391—1961
Sher, Fred D. 2,921,991. Magnetic recorder. **33**: 389—1961
Sherman, Ralph H., Jr., and Morton F. Spears. 2,951,912. Shielded magnetic translating apparatus. **33**: 986—1961
Sherron, Percival H. 2,958,402. Telephone booth with vibration absorbing base structure. **33**: 990—1961
Sherwood, Henry A. (see Vegliante, Donald E.). **33**: 256—1961
Shoaf, James R. (see Nulton, John H., Jr.). **33**: 1276—1961
Shorb, Marion P. 2,961,496. Amplifier for recording and playback in a dictating machine and the like. **33**: 389—1961
Sieber, Charles B. 2,956,438. Vibrator. **33**: 991—1961
Siebers, Robert W. 2,946,872. Shock and vibration resistant electromagnetic contactor. **33**: 1816—1961
Siegel, Vernon H. 2,977,584. Engine-noise generator. **33**: 1440—1961
Siegemund, Richard. 2,941,740. Rewinding cassette for tapes, filaments or wires. **33**: 554—1961
Sieler, George J. 2,971,598. Loudspeaker. **33**: 824—1961
Silverman, Milton B. 2,947,013. Audible tooth brush. **33**: 115—1961
Silverman, Robert M. 2,969,242. Dictating machine. **33**: 1157—1961
Simpson, Henry W. (see Sharp, James M.). **33**: 391—1961
Simshauser, Elvin D. (see Hawley, Mones E.). **33**: 824—1961
Skarzynski, David (see Webber, Melvyn E.). **33**: 1438—1961
Slade, Hector V. 2,938,730. Gramophone record changers. **33**: 120—1961
Smith, Cloyd D. and Robert L. Mathews. 2,940,537. Means and techniques for silencing sound energy. **33**: 393—1961
Smith, Frederick H. (see Stedman, Cecil K.). **33**: 263—1961
Smith, Jack C. 2,970,666. Apparatus for calibrating seismic velocity loggers. **33**: 992—1961
Smithberg, Floyd E. (see Pierson, Arnold A.). **33**: 985—1961
Spears, Morton F. (see Sherman, Ralph H., Jr.). **33**: 986—1961
Spence, Robert Sydney. 2,938,966. Electromechanical transducers. **33**: 256—1961

—— 2,940,762. Locking device for phonograph pickup arm. 33: 257—1961
Spierto, James R. (see Dixon, Austin). 33: 1648—1961
Springer, Anton Marian. 2,977,423. Rotatable electromagnetic transducers. 33: 987—1961
Staar, Marcel Jules Helene. 2,946,594. Phonographs. 33: 259—1961
—— 2,954,980. Phonographic apparatus. 33: 385—1961
—— 2,955,825. Movable tone arm rest. 33: 385—1961
—— 2,971,763. Phonograph record adapter. 33: 825—1961
—— 2,977,124. Phonograph apparatus. 33: 1158—1961
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Volume per seat and variation of the reverberation time with the size of the audience. Jaime R. Carbonell and José L. Zuccoli. **33**: 757—1961

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Acoustics of four large Viennese halls. E. J. Skudrzyk and E. Hirschwehr. **33**: 837—1961

Acoustics of the Jerusalem Congress Hall (Binyanei Ha'Oomah). Leo L. Beranek and David L. Klepper. **33**: 837—1961

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Impedance of the ear. Y. Onchi. 33: 797—1961

4.14 Ear Protectors, Earplugs

PAPERS
Mechanical pressure-gradient-to-pressure sound transducer. T. F. W. Embleton and G. J. Thiessen. 33: 933—1961

SUBTITLES
Sound transmitter mounted in ear defender. T. F. W. Embleton and G. J. Thiessen. 33: 934—1961

PATENTS
Ear pad. Howard Noyes and Edward W. Moorman. 33: 1438—1961
Ear protector. William B. Wadsworth and Forrest R. Poole. 33: 1438—1961

4.15 Perception of Signals. Detection of Signals in Noise

PAPERS
Application of the theory of signal detectability to amplitude discrimination. Wilson P. Tanner, Jr. 33: 1233—1961
Auditory detection of an unspecified signal. Richard F. Gundy. 33: 1008—1961

Detection of auditory sinusoids of uncertain frequency. David M. Green. 33: 897—1961
Detection of complex signals as a function of signal bandwidth and duration. C. Douglas Creelman. 33: 89—1961
Interval of time uncertainty in auditory detection. James P. Egan, Gordon Z. Greenberg, and Arthur I. Schulman. 33: 771—1961
Memory for waveform and time uncertainty in auditory detection. James P. Egan, Arthur I. Schulman, and Gordon Z. Greenberg. 33: 779—1961
Operating characteristics, signal detectability, and the method of free response. James P. Egans, Gordon Z. Greenberg, and Arthur I. Schulman. 33: 993—1961
Perception of pitch, timbre, and loudness. Robert A. Jenkins. 33: 1550—1961
Perception of sounds characterized by a rapidly changing resonant frequency. P. T. Brady, A. S. House, and K. N. Stevens. 33: 1357—1961
Seismometer sounds. Sheridan Dauster Speeth. 33: 909—1961
Sequential effects in the signal-detection situation. S. D. Speeth and M. V. Mathews. 33: 1046—1961
Stimulus vs response uncertainty in recognition. John A. Swets and Susan T. Sewall. 33: 1586—1961

LETTERS TO THE EDITOR

Dependence of successive judgments in detection tasks: correctness of the response. Elizabeth F. Shipley. 33: 1142—1961
Remarks on Birdsall's "Detection of a signal specified exactly with a noisy stored reference signal." Richard F. Gundy. 33: 695—1961
Some comments and a correction of "Psychoacoustics and detection theory." David M. Green. 33: 965—1961

ABSTRACTS

An energy detection model for monaural auditory detection. S. M. Pfafflin and M. V. Mathews. 33: 1654—1961
Detecting a signal in noise: further considerations. Lloyd A. Jeffress. 33: 854—1961
Effect of double clipping in beam forming and correlation. Victor C. Anderson. 33: 1680—1961
Eliminating stimulus bias in category scaling. Irwin Pollack. 33: 1656—1961
Experimental case study of a "tone-deaf" individual. Wilson P. Tanner, Jr., and Laurence Rivette. 33: 1655—1961
Information processing on simultaneously presented auditory tasks. Louis M. Herman and John F. Corso. 33: 1656—1961
Method of free response in signal detection: a simplified technique. James P. Egan. 33: 854—1961
On the matching of "loudness." C. Douglas Creelman. 33: 1655—1961
Phase correction of band-shifted signals. C. S. Clay and William Liang. 33: 1680—1961
Signal detection in a multipath medium by M.E.S.S. processing. Antares Parvulescu. 33: 1674—1961
Signal presentation rate and auditory vigilance. Richard L. Martz and J. Donald Harris. 33: 855—1961
Simultaneous vs successive observation intervals in signal detection. S. M. Pfafflin. 33: 855—1961
Space-time limits in acoustic signal processing. Philip L. Stocklin. 33: 1680—1961
Statistical properties of multipath signal. C. D. Mumsell. 33: 1674—1961

SUBTITLES

Covariance of two signals. C. S. Clay. 33: 867—1961

BOOK REVIEWS

Sound Production and Sound Reception by Insects: a Bibliography. Mable Frings and Hubert Frings. (Reviewed by Alan D. Grinnell.) 33: 1154—1961

***5. Applied Acoustics, Instruments and Apparatus.* (*See also 2.8, 4.5, 9.6, 10.3, 12.3, 12.3p, 12.3Z, 13.11, 13.11n, and 13.11t.*)**

5.1 General, Unclassified

PAPERS

Automatic processing system for acoustical data. Winston E. Parker and Larry V. East. 33: 1—1961

LETTERS TO THE EDITOR

On preferred frequencies for acoustical measurement. Paul Wang. 33: 1625—1961

ABSTRACTS

General design and performance characteristics of a military voice communication system. State of the art appraisal. William B. Snow. 33: 1661—1961

PATENTS

Acoustic siren for generating wide band noise. Henning E. von Gierke and John N. Cole. 33: 1812—1961
Audible tooth brush. Milton B. Silverman. 33: 115—1961
Drip silencer. Lawrence A. Turpin. 33: 1645—1961
Noisemaking toys. Jerome H. Lemelson. 33: 1812—1961
Pulsation dampener. Ludolf Engel and Herbert Panzer. 33: 1812—1961
Sonic liquid sprayer. Albert G. Bodine. 33: 254—1961
Sound producing device. Wilhelm Hanf. 33: 379—1961
Suction roll silencer. Edgar J. Justus. 33: 379—1961
Terminations for acoustic delay lines. Vincent J. Porter. 33: 379—1961

BOOK REVIEWS

The Physical Examination of Metals. B. Chalmers and A. G. Quarrell, Editors. (Reviewed by Floyd A. Firestone.) 33: 544—1961

5.2 Amplifiers and Attenuators

PATENTS

Control of amplifier source resistance. Charles A. Wilkins. 33: 379—1961
Low noise preamplifier. Wayne R. Johnson. 33: 379—1961

5.3 Acoustic Impedance Measurement. (See also 11.4 and 12.3Z.)

PATENTS

Acoustic material sensing apparatus. Yale Jay Lubkin. 33: 116—1961

5.4 Analyzers and Filters, Acoustic and Electric. Oscillographs. (See also 5.15 and 12.3f.)

PAPERS

Automatic processing system for acoustical data. Winston E. Parker and Larry V. East. 33: 1—1961

ABSTRACTS

Automatic one-third octave band analyzer for noise and vibration analysis. G. F. Ginty and R. D. Collier. 33: 853—1961
Further progress with colorless artificial reverberation. M. R. Schroeder. 33: 852—1961
Measurement of probability density. Herbert L. Fox. 33: 853—1961

PATENTS

Electromechanical filter. Bernard Niederman. 33: 380—1961

5.5 Audiometers. (See also 4.4 and 4.5.)

PAPERS

Noise-induced permanent threshold shift at 2000 cps and 4000 cps. J. C. Nixon and A. Glorig. 33: 904—1961

LETTERS TO THE EDITOR

Supra-aural cushions in audiometry. Russell L. Sergeant and J. Donald Harris. 33: 966—1961

5.7 Frequency Standards, Frequency Measuring and Recording Instruments

SUBTITLES

Modulation stroboscope. B. D. Cook and E. A. Hiedemann. 33: 948—1961

PATENTS
Musical instrument tuning apparatus. Horst Albin Poehler. 33: 1645—1961

5.8 Loudspeakers, Horns. (See also 5.13, 5.17, and 5.18.)

PAPERS
Corona-type loudspeaker for animal studies. Eugene Ackerman, Adam Anthony, and Fujio Oda. 33: 1708—1961
Generation of intense audio sound fields utilizing arrays of multiple-driver horns. Sidney E. Levy and Richard W. Carlise. 33: 936—1961

ABSTRACTS
General design and performance characteristics of a military voice communication system. State of the art appraisal. William B. Snow. 33: 1661—1961
Probe microphone with horn coupling. E. A. G. Shaw. 33: 1679—1961
Role of time integration in the discrimination of frequency response patterns. F. V. Hunt. 33: 1653—1961
Specification of loudspeaker characteristics. David H. Kaye and David L. Klepper. 33: 1653—1961

PATENTS
Acoustical devices. William W. Haerther, Jr. 33: 718 (2 patents)—1961
Bass speaker enclosure. Claude C. Farwell. 33: 824—1961
Compound electric speaker. Saburo Uchida. 33: 116—1961
Electrostatic speaker circuit. Julius J. Hupert and Andrzej B. Przedpelski. 33: 1646—1961
Hair dryer sound system. Jack H. Goldberg and Everett L. Goldstein. 33: 718—1961
High fidelity loudspeaker cabinet. Jesse C. Irby. 33: 1275—1961
High fidelity speaker apparatus. Stanley M. Pinski. 33: 1275—1961
Loudspeaker. Sipko L. Boersma. 33: 717—1961
Loudspeaker. George J. Sieler. 33: 824—1961
Loudspeaker. Siegfried Josef Zuerker. 33: 116—1961
Loudspeaker apparatus. Stig Carlsson. 33: 1275—1961
Loudspeaker assembly. Charles A. Perry. 33: 255—1961
Loudspeaker baffle assembly. Norman Friedman. 33: 255—1961
Loudspeaker baffle having improved low frequency reproduction characteristics. Benjamin B. Lowell. 33: 1276—1961
Loudspeaker construction. George W. Fabel and Siegfried J. Zuerker. 33: 1276—1961
Loudspeaker enclosure. Scott F. Everitt. 33: 1812—1961
Loudspeaker enclosures. J. Carter Perkins, Jr. 33: 1438—1961
Loudspeaker magnetic field structure. Roger E. Hamson. 33: 718—1961
Loudspeakers. Donald M. Chave. 33: 1275—1961
Loudspeakers. Fred A. Manley. 33: 116—1961
Loudspeaker system. Homer A. Blake. 33: 1646—1961
Loudspeaker system. Samuel P. Zimmerman and William G. Madison. 33: 1812—1961
Magnetic loudspeaker. Elmor A. Heppner. 33: 718—1961
Method of assembly of a loudspeaker. Charles A. Perry. 33: 255—1961
Omnidirectional electroacoustic converter of electromagnetic type. Saburo Uchida. 33: 1275—1961
Omnidirectional stereo system. Rowland L. Miller and Clifford C. McDonald. 33: 1646—1961
Reflex horn loudspeaker. Richard W. Carlisle. 33: 1276—1961
Simulated stereophonic loudspeaker. Edward C. Wente. 33: 1646—1961
Sound reproducer. Glen C. Van Camp. 33: 1645—1961
Sound reproducing means. Warner W. Clements. 33: 255—1961
Transducer. Sidney E. Levy and Bernard C. Sharp. 33: 255—1961
Transducer. Michael C. Supitilov. 33: 1275—1961
Transducers. Robert B. Albright, Edward J. Michonski, and Francis Richardson. 33: 259—1961
Transducers. Albert J. Katella. 33: 1275—1961
Triplanal speaker enclosure. Warren A. Rice. 33: 255—1961
Variable dynamic infinite damping loudspeaker enclosure device. Reuben Guss. 33: 1646—1961

5.9 Microphones. Microphone Calibration Equipment and Techniques. (See also 5.18, 12.3p, and 13.11t.)

PAPERS
Mechanical pressure-gradient-to-pressure sound transducer. T. F. W. Embleton and G. J. Thiessen. 33: 933—1961
Pressure response of condenser microphones at low ambient pressures. James D. Chalupnik, Eric Rule, and Fred J. Suellentrop. 33: 177—1961
Reciprocity calibration of electroacoustic transducers in the time domain. Arthur F. Niemoller. 33: 1712—1961
Reciprocity calibration of microphones in a diffuse sound field. H. G. Diestel. 33: 514—1961

LETTERS TO THE EDITOR
Comments on "Pressure response of condenser microphones at low ambient pressures." Frank Massa. 33: 810—1961
DeForest's "diffraction microphone"—optical detection of sound in air. Richard C. Levine. 33: 1625—1961
Statement in answer to Comments by Mr. Massa on our paper "Pressure response of condenser microphones at low ambient pressures." J. D. Chalupnik, Eric Rule, and F. J. Suellentrop. 33: 810—1961

ABSTRACTS
Active electroacoustic networks and the synthetic absorber. Antares Parvulescu. 33: 1668—1961
Calibration of cardiographic microphones. Howard C. Hardy. 33: 1671—1961
Extension of the pressure response-frequency characteristics of condenser microphones by means of carrier-frequency techniques. Walter Koidan and June O. Magruder. 33: 853—1961
Low-frequency microphone. J. R. Barger, A. Witchey, and L. Weinreb. 33: 854—1961
Miniature universal lightweight military microphone. E. D. Simshauser and R. M. Carrell. 33: 854—1961
Probe microphone with horn coupling. E. A. G. Shaw. 33: 1679—1961
Wide-band carrier system for condenser microphone. Herbert L. Fox. 33: 853—1961

PATENTS
Acoustic apparatus. Harry F. Olson and John Preston. 33: 116—1961
Desk microphone combined with support for pen. Giovanni Geloso. 33: 117—1961
Directional microphone having a low susceptibility to shock and wind. Rudolf Görike. 33: 118—1961
Electromechanical transducer. Robert K. Duncan. 33: 118—1961
Electrostatic microphone circuits. Adolph R. Morgan. 33: 117—1961
Hand microphone. Frank E. Runge and Donald F. Balmer. 33: 116—1961
Hand microphone for sound transducing appliances. Willy Müller and Otto Holub. 33: 118—1961
Microphone. Arthur R. Cammack. 33: 117—1961
Microphones. Alexander L. Dvorsky. 33: 118—1961
Microphones. William L. Hartsfield. 33: 117—1961
Microphone support structure. Robert K. Duncan. 33: 118—1961

Microphone with an adjustable attenuator. Willy Müller. 33: 118—1961
Piezoresistive semiconductor microphone. Fred P. Burns. 33: 117—1961
Pressure gradient noise canceling microphone. Wayne A. Beaverson. 33: 117—1961
Sound directing apparatus. Paul-Friedrich Warning. 33: 117—1961

NEWS
Microphone calibration research at NBS. 33: 1807—1961

5.10 Navigational Instruments Using Air Sound. Altitude Measuring Instruments. Sound Ranging (for Underwater Ranging see 13.11n)

PAPERS
Comparison analysis on four directional receiver correlators. M. J. Jacobson and R. J. Talham. 33: 518—1961
Optimum envelope resolution in an array correlator. Melvin J. Jacobson. 33: 1055—1961

PATENTS
Acoustic direction finder. James F. Price. 33: 1156—1961
Mechanical device for distance discrimination of sounds. George J. Thiessen and Tony F. W. Embleton. 33: 1156—1961
Methods of and means for measuring travel times through earth formations. Robert A. Broding, John O. Ely, and Gerald C. Summers. 33: 119—1961
Recordation of seismic signals. John D. Ball. 33: 118—1961
Seismic exploration apparatus. Wilhelm Beuermann. 33: 119—1961
Well-shooting system. Raymond A. Peterson. 33: 119—1961

5.13 Public Address Systems and Sound Picture Installations

ABSTRACTS
Design of distributed-loudspeaker speech systems. Martin F. Gardiner and David H. Kaye. 33: 853—1961

PATENTS
Stereophonic sound propagation system. Sidney E. Levy. 33: 380—1961

5.14 Rayleigh Disks. Radiometers

PAPERS
Acoustic radiation pressure bearing. Manfred I. Seegall. 33: 566—1961

5.15 Sound Level Meters. Level Recorders. Sound Pressure Measurement. (See also 5.4.)

PAPERS
Automatic processing system for acoustical data. Winston E. Parker and Larry V. East. 33: 1—1961

ABSTRACTS
Improved instrumentation for impulse noise analysis. George J. Harbold and James W. Greene. 33: 853—1961
Some effects of an observer on the readings of a sound-level meter. R. W. Young and B. B. Bauer. 33: 1676—1961

PATENTS
Noise exposure meter. Wolf-Wito von Wittern and Henning E. von Gierke. 33: 1646—1961

5.16 Sound Recording and Reproducing. General

PAPERS
Improved quasi-stereophony and "colorless" artificial reverberation. M. R. Schroeder. 33: 1061—1961

ABSTRACTS
Further progress with colorless artificial reverberation. M. R. Schroeder. 33: 852—1961
Role of time integration in the discrimination of frequency response patterns. F. V. Hunt. 33: 1653—1961

PATENTS
Balance indicator for stereophonic sound systems. John H. Nulton, Jr., and James R. Shoaf. 33: 1276—1961
Combined photographic transparency and sound track carrier support frame. Morris Schwartz and Edward K. Kaprelian. 33: 718—1961
Dictation system. Joseph H. Weber. 33: 1276—1961
Endless tape memory system. Lothar M. Schmidt and Harold L. Schwartz. 33: 545—1961
Magazine-type device for magnetically recording and/or transmitting sound in synchronous operation with a separate device for taking or projecting motion pictures. Rudolf Kuhnert and Johannes Viehbach. 33: 1812—1961
Noise suppressor for theater sound reproduction. John F. Byrd and Cataldo U. Falco. 33: 824—1961
Sound monitoring circuitry and instrument. Myron G. Duncan. 33: 1276—1961
Sound reproducing apparatus. David F. Kennedy. 33: 1276—1961
Tape ad mechanism for juke box. Reuel Ford Pray, III, and Eugene E. Drucker. 33: 380—1961

BOOK REVIEWS
Introduction to Hi-Fi. Clement Brown. (Reviewed by F. E. White.) 33: 1809—1961

5.16d Disk Recording (including cutting and embossing)

PATENTS
Accessory for automatic record changer. Fred L. Bailey and John P. Jenkins. 33: 1159—1961
Apparatus for driving gramophone records. Sergio Favaro. 33: 1439—1961
Apparatus for selectively reproducing any one or more of multiple recorded passages on recording medium. Wilbur E. Walters. 33: 384—1961
Apparatus for sound recording. Horst Redlich. 33: 546—1961
Arrangement for producing a sound recording. Horst Redlich. 33: 1159—1961
Arrangement in tone arms for gramophones. Nils Kauri Lindgren. 33: 1438—1961
Attachment for phonographs. Karl G. King. 33: 546—1961
Automatic-indexing record changer. Colin B. Dale. 33: 1158—1961
Automatic phonograph, including pickup and record-selecting mechanisms. Louis Thévenaz. 33: 1277—1961
Automatic phonographs. James L. D. Morrison. 33: 383—1961
Automatic phonograph tripping mechanism. Petrus A. De Boer. 33: 720—1961
Automatic record changer and player. Arnold P. Grunwald. 33: 381—1961
Automatic record changer for phonographs. Robert Herman Seidel, Heinz Hugo Wilhelm Rietzel, and Alexander Rudi Fiedler. 33: 385—1961
Automatic record-changer speed control. Edwin S. Bara. 33: 1157—1961
Automatic record-changer speed control. John Cleybergh. 33: 720—1961
Automatic record changing gramophones. Edward William John Caddy. 33: 260—1961
Automatic record player. Gérard Hugel. 33: 825—1961
Automatic record player. James E. Vistain, Jr. 33: 260, 1277, 1439—1961
Automatic restacking mechanism for phonograph. Roy Q. Edwards. 33: 1158—1961
Bender type piezoelectric transducer. Robert B. Gray. 33: 259—1961
Binaural phonograph pickup. Robert G. Gray. 33: 259—1961
Ceramic binaural phonograph pickup. Jerome D. Heibel. 33: 381—1961
Ceramic transducer elements. James M. Jacque. 33: 1646—1961

Change cycle delay apparatus for phonographs. Willard J. Faulkner and Jack E. Bayha. 33: 1438—1961
Compensating network for binaural pickup. Robert B. Gray. 33: 385—1961
Cutter control means for cutting recording grooves. Lawrence J. Scully. 33: 381—1961
Device for cleaning phonograph records, particularly synthetic resin phonograph records. Leo Mertes. 33: 1277—1961
Dictating machine. Robert M. Silverman. 33: 1157—1961
Disabling mechanism for automatic phonograph. Lawrence Vincent Guest. 33: 1278—1961
Disk record cleaning device. Cornelius Mantell, Jr. 33: 120—1961
Dual-needle phonograph cartridge. John F. Wood. 33: 119—1961
Dual-stylus phonograph pickup. Fritz L. Schweitzer, Jr. 33: 119—1961
Electromechanical transducers. Robert Sydney Spence. 33: 256—1961
Gramophone pickups. Raymond William Bayliff. 33: 1278—1961
Gramophone record changers. Hector V. Slade. 33: 120—1961
Gramophone record changing mechanisms. Harry da Costa. 33: 259—1961
Gramophone records cleaning machine. Cecil Ernest Watts. 33: 1276—1961
Guide means for phonograph needle. William T. Moore. 33: 385—1961
High-fidelity transcription tone arm. Benjamin B. Bauer, Charles E. Seeler, and Lee Gunter, Jr. 33: 1438—1961
Indexing system. Donald E. Vegliante, Henry A. Sherwood, William Rosenhagen, and Grace I. Wicks. 33: 256—1961
Locking device for phonograph pickup arm. Robert Sydney Spence. 33: 257—1961
Magazine phonographs. Hans Christian Hansen. 33: 1277—1961
Method and apparatus for dual sound track recording. Horst Redlich, Hans-Joachim Klemp, and George Neumann. 33: 386—1961
Methods of manufacturing phonograph styli. Ralph J. Bondley. 33: 719—1961
Miniature recording device. William A. Black and John S. Millard. 33: 720—1961
Movable tone arm rest. Marcel Jules Helene Staar. 33: 385—1961
Moving coil electromechanical transducers. Philip Barnet Vanderlyn. 33: 720—1961
Moving coil pickups for phonographs and the like. Thomas Stewart Marshall. 33: 1278—1961
Multi-speed phonograph record player. George E. Redfield. 33: 258—1961
Needle selecting mechanism. James L. D. Morrison and Robert L. Van Antwerp. 33: 719—1961
Phonograph. Willard J. Faulkner and Jack E. Bayha. 33: 1159—1961
Phonograph. Robert Wagner. 33: 257—1961
Phonograph and tone arm. Theodore R. Duncan. 33: 258—1961
Phonograph annunciator-playmeter. Harry Herbert Vanderzee and George S. Brown, Jr. 33: 825—1961
Phonograph apparatus. Hermann E. F. C. Lingenbrink. 33: 256—1961
Phonograph apparatus. Winfield W. Loose. 33: 824—1961
Phonograph apparatus. Marcel Jules Helene Staar. 33: 1158—1961
Phonograph armature and stylus assembly. Peter E. Pritchard. 33: 119—1961
Phonograph device. Theodore R. Duncan. 33: 258—1961
Phonograph drive mechanism. Herbert L. Hartman. 33: 719 (2 patents)—1961
Phonographic apparatus. Marcel Jules Helene Staar. 33: 385—1961
Phonograph pickup. Benjamin B. Bauer, Lee Gunter, Jr., and Charles E. Seeler. 33: 257—1961
Phonograph pickup. Lee Gunter, Jr., and Carl R. Anderson. 33: 719—1961
Phonograph pickup. John F. Wood. 33: 1647—1961
Phonograph pickup arm. Norman Leonard Chalfin. 33: 1277—1961
Phonograph pickup assembly. James L. D. Morrison and Willard J. Faulkner. 33: 258—1961
Phonograph pickups. Norman H. Dieter, Jr., and Egon H. Bauer. 33: 260—1961
Phonograph pickups. Harry F. Klingener. 33: 1157—1961
Phonograph record. Clayton C. DeWitt. 33: 256—1961
Phonograph record. Peter C. Goldmark. 33: 382—1961
Phonograph record adapter. Marcel Jules Helene Staar. 33: 825—1961
Phonograph record cleaner. Clarence R. Taylor. 33: 718—1961
Phonograph record for praxinoscopic devices. Porter S. Morgan. 33: 1647—1961
Phonograph record player. Fred Krahulec. 33: 257—1961
Phonograph records. Rudolf Flötgen. 33: 255—1961
Phonograph reproducer. Peter C. Goldmark. 33: 1158—1961
Phonographs. Hilliard F. Greene. 33: 386—1961
Phonographs. Marcel Jules Helene Staar. 33: 259—1961
Phonograph stylus. Ralph J. Bondley. 33: 1647—1961
Phonograph stylus and holder therefor. Maurice M. Palo. 33: 261—1961
Phonograph stylus indexing mechanism. Erik Wennerbo. 33: 119—1961
Phonograph tone arm. Frederick J. Klein. 33: 1439—1961
Pickup arm. Nello Meoni. 33: 1157—1961
Pickup arm for speaking machine. Roger Bajulaz. 33: 380—1961
Pickup cartridge and stylus supporting nosepiece therefor. Paul Vincent Kelly and Edward R. McKee. 33: 1439—1961
Playback system for stereophonic records with mechanical rumble filter. Harry A. Pearson. 33: 383—1961
Plural-speed gramophones. James Alexander Lee. 33: 384—1961
Portable dictation machine. Donald F. Balmer, William H. Lyon, Frank E. Runge, and Edward P. Johnson. 33: 384—1961
Radial phonograph pickup arm. Arnold P. Grundwald. 33: 256—1961
Raising and lowering device for phonograph arm. Alex M. Wyrod. 33: 1157—1961
Record changer. James T. Dennis. 33: 257, 260—1961
Record changer. Emil Knecht. 33: 383—1961
Record changer. Robert A. Wolfe. 33: 1277—1961
Record changer for talking machines. Friedrich Cavallo and Hellmuth George Martin Petzhold. 33: 1278—1961
Record-changing phonograph. Frank Krahulec. 33: 1439—1961
Record player. Edwin S. Bara. 33: 546—1961
Record player. Sjoerd Edema. 33: 718—1961
Record player. Jean Foufounis. 33: 1647—1961
Record player. Philip W. Marks. 33: 384—1961
Record player. Andrew Maxim. 33: 382—1961
Record player. Bonifacius G. van Essen. 33: 259—1961
Record player. Philippe E. Winter. 33: 121—1961
Record player comprising a device for setting different turntable speeds. Gerhard von Magnus. 33: 120—1961

Record-player speed control. James E. Vistain, Jr. 33: 1439—1961
Record-reproduce phonographic system. George W. Esser. 33: 1278—1961
Record selecting mechanism. Harry H. Vanderzee and George S. Brown, Jr. 33: 383—1961
Record support and drive means. Herman H. Mueller. 33: 382—1961
Record-tape music box. Wilhelm Vershoven. 33: 258—1961
Rectilinear guide mechanism for phonograph pickup arms. Dominick S. Tomaselli. 33: 381—1961
Selective record lowering, lifting, and releasing means for automatic interlocking and conventional record players. Herman H. Mueller. 33: 381—1961
Selector device for automatic phonographs. John H. Riggs. 33: 382—1961
Sound reproducing apparatus. Lloyd J. Bobb and Orlando Taraborelli. 33: 719—1961
Sound reproducing apparatus. Lawrence Vincent Guest. 33: 121, 383—1961
Sound slide film machine. Robert H. Larson, Charles W. Carlson, and Joost Koenig. 33: 546—1961
Sound track selection phonograph. Morton Stimler. 33: 384—1961
Sound transducing apparatus. Philip J. Thomas and Frank L. Moore. 33: 1157—1961
Static electricity eliminator and conditioner for phonograph record disks. James Ross. 33: 1647—1961
Stereophonic pickup with mechanical rumble filter. Norman H. Dieter, Jr. 33: 383—1961
System for measuring the use of a phonograph needle. Glenn M. McGuckin. 33: 546—1961
Tone arm lifter for phonographs. William L. Rodgers. 33: 1157—1961
Tone arm with straight line motion. Stanley W. Lange. 33: 120—1961
Transducer devices for stereophonic grooved sound records. Hans-Robert Kühn. 33: 1159—1961
Transversal-phonographic machines. James F. Freeman. 33: 1158—1961
Turntables and driving mechanisms for automatic record-changing phonographs. Alfred G. Ristau and Arnold E. Ristau. 33: 1159—1961

5.16f Film Recording (by photographic means)

PATENTS

Device for stereo-reproduction of sound registered on cinematograph films. Ramon Ubeda Perello. 33: 720—1961
Film and sound projection. Heinz Berkenhoff. 33: 1439—1961
Multi-system sound recording and photographic strip. Martin E. Evans. 33: 386—1961
Polarized vibration recording medium and system therefor. Stuart D. Noble. 33: 386—1961
Sound projector arrangement. Herbert Reinsch and Siegfried Freiberger. 33: 1647—1961
System of producing and reproducing sound motion pictures. Michael De Angelo. 33: 720—1961

5.16m Magnetic Recording

PATENTS

Adjustable magnetic erasing head. Saburo Akai. 33: 1280—1961
Amplifier for recording and playback in a dictating machine and the like. Marion P. Shorb. 33: 389—1961
Amplifier oscillator for magnetic recorder-reproducer. Robert H. Barton. 33: 1279—1961
Apparatus for enabling a continuous magnetic tape or some other support in the form of a continuous band to be regularly driven inside a magazine charger. Didier Appert and Serge Cailliot. 33: 388—1961
Apparatus for extending a magnetic sound record sheet on a magnetic sound record reading machine. Yasushi Hoshino and Minoru Sato. 33: 548—1961
Apparatus for making duplicate magnetic records. Marvin Camras. 33: 388—1961
Apparatus for recording and playback. Gale White. 33: 386—1961
Apparatus for supporting a magnetic sound recording and reproducing head in a magnetic sound record reading machine. Yasushi Hoshino. 33: 555—1961
Automatically reversing tape player. Ulisses M. Jones. 33: 554—1961
Automatic dual reproducing head for tape recording device. Sidney O. Sampson. 33: 1279—1961
Automatic reversing mechanism for a tape recorder. David J. Jamieson. 33: 550—1961
Coated sheet magnetic recorder. William H. Lyon and Louis E. Nagy. 33: 122—1961
Coilless playback head. David E. Wiegand. 33: 387—1961
Colinear double channel magnetic recorder and reproducer head. William D. Moehring and Charles F. Murphy. 33: 551—1961
Control arrangement for the stereo head of a tape recorder. Werner Jung. 33: 1647—1961
Control system for recording apparatus. James T. Blakistone. 33: 551—1961
Convertible self-biasing or amplifying circuit for magnetic recording or reproducing. Marshall C. Kidd. 33: 555—1961
Dictating machine. Richard E. Trost. 33: 1282—1961
Dual channel magnetic tape recorder. William H. Lyon. 33: 122—1961
Electromagnetic head construction. Marvin Camras. 33: 549—1961
Electromagnetic recording heads. Laszlo Namenyi-Katz. 33: 548—1961
Electromagnetic transducer. Jules Louis Joseph Donceel and Henri Cornelius Johannes van der Harck. 33: 121—1961
Electromagnetic transducers. David F. Brower. 33: 549—1961
Electrostatic tape and methods of construction. Albert J. Devaud. 33: 546—1961
Ferrite magnetic heads. Helmut Neumann. 33: 555—1961
High efficiency magnetic recording and reproducing head. Otto Kornei. 33: 387—1961
High frequency magnetic transducers. Mark Naiman and Howard Schwartz. 33: 985—1961
Large tape reel adoptor for home tape recorders. Robert H. Bodholdt. 33: 986—1961
Magnetic device for sound reproducing means. Johannes Wilhelmus De Bruyn. 33: 986—1961
Magnetic erase head. Eric Richard Robson. 33: 1280—1961
Magnetic field reproducing apparatus. William Albert Wootten. 33: 554—1961
Magnetic head. Cravens L. Wanlass and Sylvan D. Wanlass. 33: 122—1961
Magnetic head assembly. William D. Moehring. 33: 985—1961
Magnetic heads. Georg Rosenberger and Helmut Neumann. 33: 388—1961
Magnetic heads for recording and reproducing signals. Hans-Otto G. Leilich. 33: 553—1961
Magnetic pickup head. David E. Wiegand. 33: 387—1961
Magnetic read-write head having two gaps. Paul R. Gilson. 33: 1281—1961
Magnetic record and/or playback heads and control arrangement therefor. Francois Henri Raymond. 33: 1280—1961
Magnetic recorder. Fred D. Sher. 33: 389—1961

Magnetic recording. Lawrence H. Connell. 33: 554—1961
Magnetic recording. Robert Serrell. 33: 123—1961
Magnetic recording and reading apparatus. Yasushi Hoshino, Minoru Sato, Mamoru Namikawa, and Shigezo Tochihara. 33: 548—1961
Magnetic recording and reproducing device. Carl Marteleur. 33: 123—1961
Magnetic recording and reproducing equipment. Eugen Beyer. 33: 389—1961
Magnetic recording and reproducing machine. Arnold A. Pierson, Floyd E. Smithberg, and Michael C. Supitilov. 33: 985—1961
Magnetic recording and reproducing unit. Alec Tutchings. 33: 553—1961
Magnetic recording device. Wouter Grift and Jean Louis Roulet. 33: 388—1961
Magnetic recording heads. Siegmund Loewe and Werner Zorn. 33: 555—1961
Magnetic recording mechanism for selective skew recording. Clarence W. Martin. 33: 553—1961
Magnetic recording surface. Jacob J. Hagopian. 33: 386—1961
Magnetic recording system. Leslie L. Burns, Jr., and Eugene O. Keizer. 33: 122—1961
Magnetic recording tape reel. Victor A. Mohrlant. 33: 986—1961
Magnetic record transducing heads. Heiman W. Koren. 33: 547—1961
Magnetic sound recording apparatus. Colin D. Murdoch. 33: 549—1961
Magnetic sound recording machine. Ralph A. Schuyler. 33: 121—1961
Magnetic tape apparatus. Walter T. Selsted. 33: 1281—1961
Magnetic tape recording head. Wolfgang Bogen and Wolfgang Steinkopf. 33: 551—1961
Magnetic tape system and method. Charles P. Ginsburg, Shelby F. Henderson, Jr., Ray M. Dolby, and Charles E. Anderson. 33: 123—1961
Magnetic transducer. Donald J. De Geller. 33: 550—1961
Magnetic transducer. John R. Stovall, Jr. 33: 550—1961
Magnetic transducer. Victor R. Witt and Rex C. Bradford. 33: 547—1961
Magnetic transducer and housing. Leon J. Berman and Abraham S. Jacoby. 33: 548—1961
Magnetic transducer and method. Edgar Alan Brown. 33: 121—1961
Magnetic transducer head. Alfred E. Lorenz. 33: 1281—1961
Magnetic transducer head. David L. Wallen. 33: 1280—1961
Magnetic transducers. Helmut Neumann. 33: 551—1961
Magnetic transducing head with integral adjustment means. Lawrence H. Gernert. 33: 550—1961
Magnetogram system and apparatus for picture and sound recording. Hans Friess. 33: 1279—1961
Means for compensating a record for changes in atmospheric conditions. Yasushi Hoshino and Minoru Sato. 33: 555—1961
Means for counteracting shunt reluctance of a transducer head gap. Marvin Camras. 33: 1281—1961
Means for positioning and protecting a magnetic head of a magnetic recorder. Verner H. Nafius. 33: 549—1961
Means for recording and/or reproducing recorded high frequency signals. Arthur W. Holt. 33: 388—1961
Method and apparatus for magnetic recording and reproducing. Carl H. Becker. 33: 1279—1961
Method and apparatus for making duplicate magnetic records. Hans E. Hollmann. 33: 548—1961
Method for setting a magnetic sound record sheet on a magnetic sound record reading machine and an apparatus therefor. Yasushi Hoshino, Minoru Sato, and Mamoru Namikawa. 33: 553—1961
Method of adjusting a magnetic head. Lloyd J. Bobb. 33: 987—1961
Method of constructing magnetic heads. Michael Rettinger. 33: 386—1961
Method of demagnetizing a magnetic record. Kenneth H. Folse. 33: 555—1961
Method of making perpendicular magnetic recording head. Jacob J. Hagopian. 33: 547—1961
Mounting for magnetic heads. Herman Epstein and Oscar B. Stram. 33: 1280—1961
Multiple channel head assembly. Walter T. Selsted and Harold W. Lindsay. 33: 123—1961
Multiple magnetic head unit. Samuel Lubkin. 33: 550—1961
Noise compensation means in a magnetic recorder. Charles Colbert. 33: 553—1961
Noise elimination in a recorder-reproducer system. J. Guy Woodward. 33: 1280—1961
Plastic belt for sound recording and reproducing. Michael C. Supitilov. 33: 552—1961
Pressing plate of a magnetic sound-record-reading machine. Yasushi Hoshino and Minoru Sato. 33: 1281—1961
Pressure applying means for the tape of a magnetic recorder. Joseph M. Uritis. 33: 1279—1961
Read-write circuit for magnetic recording. Tung Chang Chen. 33: 986—1961
Recorder having visual indicator for high-frequency generator operation. Hendrikus Gerhardus Haarler and Nico Wittenberg. 33: 551—1961
Recorder-reproducer. David J. Munroe. 33: 1279—1961
Recorder-reproducer apparatus. David J. Munroe. 33: 388—1961
Recording and reproducing apparatus. Willy Müller, Walter Grandjot, Erich Osterloh, Gunter Werner, and Erich Dulze. 33: 261—1961
Recording apparatus. James Daviss Collett and Joseph Alfred Walston, III. 33: 553—1961
Resilient device for urging a magnetic record. Manfred Heitner. 33: 552—1961
Rewinding cassette for tapes, filaments or wires. Richard Siegemund. 33: 554—1961
Rotatable electromagnetic transducers. Anton Marian Springer. 33: 987—1961
Self-loading hydro-dynamic bearing. John M. Harker. 33: 552—1961
Shielded magnetic translating apparatus. Ralph H. Sherman, Jr., and Morton F. Spears. 33: 986—1961
Signal amplifier circuits. Frederick D. Waldhauer. 33: 553—1961
Skew servo for multiple channel recording system. Samuel M. Garber, Jr., Benjamin G. Walker, and Thomas T. True. 33: 552—1961
Sound head of a magnetic tape recorder. Robert Mathez. 33: 123—1961
Sound recording and reproducing apparatus. Jacques Dubois. 33: 1278—1961
Sound recording and reproducing apparatus. Robert Elick Kleve. 33: 720—1961
Sound recording and reproducing apparatus. Barton A. Proctor. 33: 551—1961
Sound recording apparatus. Colin B. Dale. 33: 121—1961
Sound reproducing head. Heinz E. Kallmann. 33: 552—1961
Sound support driving mechanism in a sound recording reproducing apparatus. Eudore Brasseur. 33: 547—1961

System and apparatus for superimposing voice-time messages on signal recordings. John O. Campbell and Yee J. Liu. 33: 986—1961
Tape cartridge and tape loading mechanism. Malvin S. Bilsback. 33: 554—1961
Tape length indicator, more particularly for magnetic sound tapes. Siegmund Loewe and Werner Zorn. 33: 547—1961
Tape recorder brake mechanism. Austin W. Ellmore. 33: 554—1961
Tape recorder control mechanism. Richard E. Maples. 33: 985—1961
Tape recorders. Richard C. Meyer. 33: 553—1961
Tape recorders. Laszlo Namenyi-Katz. 33: 555—1961
Transversal-phonographic machines. William G. Whitney. 33: 1157—1961
Web transport speed control. Charles B. Pear, Jr. 33: 987—1961

5.17 Telephones, Telephone Earphones, Intercommunication Systems. (See also 5.13.)

PAPERS
Mechanical pressure-gradient-to-pressure sound transducer. T. F. W. Embleton and G. J. Thiessen. 33: 933—1961

ABSTRACTS
Condenser earphone with solid dielectric. G. M. Sessler and J. E. West. 33: 1653—1961
General design and performance characteristics of a military voice communication system. State of the art appraisal. William B. Snow. 33: 1661—1961
Speech projection and reception systems—developments, characteristics, prospects. Jerry P. Christoff. 33: 1662—1961

PATENTS
Hands-free telephone support. Francis H. Lehman. 33: 261—1961
Two-way telephone handset amplifying system. Norman L. Chalfin. 33: 1440—1961

5.18 Transducing Principles, Structures, and Materials, General. (See also 5.8, 5.9, 5.17, 10.3, 12.3p, 13.7, and 13.11t.)

PAPERS
Capacitive accelerometers with optimum frequency-response characteristics. Eric Rule, Fred J. Suellentrop, and Thomas A. Perls. 33: 33—1961
Cylindrical wave reciprocity parameter. Robert J. Bobber and Gerald A. Sabin. 33: 446—1961
Factors that determine the equivalent noise pressure, free-field voltage response, and efficiency of a transducer at low frequencies. Paul M. Kendig. 33: 674—1961
Maximum power criterion for the vibrating free edge disk. Raymond N. House, Jr. 33: 561—1961
Pulse superposition method for measuring ultrasonic wave velocities in solids. H. J. McSkimin. 33: 12—1961
Reciprocity calibration of electroacoustic transducers in the time domain. Arthur F. Niemoller. 33: 1712—1961
Sonar transducer pulse calibration system. John D. Wallace and E. W. McMorrow. 33: 75—1961

LETTERS TO THE EDITOR
Hypersonic resonance of quartz at 3500 Mc. James L. Stewart and Ellen S. Stewart. 33: 538—1961
Inherent limitations of accelerometers for high-frequency vibration measurements. Fred Schloss. 33: 539—1961

ABSTRACTS
Applications of delay lines in correlation processing. C. W. Hoover, Jr. 33: 1657—1961
Esaki diode pressure transducer. M. E. Sikorski. 33: 1654—1961
Lagrangian formulation and network analogs for multimode electromechanical transducers. Frank J. Rosato. 33: 854—1961
Low-loss wide-band delay line using multielement ceramic transducers. C. A. Bieling and R. Hixenbaugh. 33: 1658—1961
Reciprocity calibration in the near field. Gordon E. Martin. 33: 1678—1961
Semiconductor strain gauges. R. N. Thurston. 33: 1654—1961
Semiconductor transducers—general considerations. Warren P. Mason. 33: 1654—1961
Wide-band variable ultrasonic delay line. O. R. Price, M. E. Pedinoff, E. Lax, E. Sitting, G. R. Crane, and R. H. Duval. 33: 1657—1961

SUBTITLES
Transducers for exciting vibrations in a solid rod. Joseph Zemanek, Jr., and Isadore Rudnick. 33: 1284—1961

PATENTS
Acoustic damper. Cecil K. Stedman. 33: 390—1961
Ceramic electromechanical transducer. Steward S. Flaschen and Harold A. Sauer. 33: 1282—1961
Circuit element transducer. Wilbur T. Harris. 33: 1440—1961
Composite electromechanical transducer. Harry B. Miller. 33: 1648—1961
Electroacoustic transducer having coaxially-spaced cylindrical coils. Andre Blanchard. 33: 1440—1961
Electromechanical transducer. Wilbur T. Harris. 33: 261—1961
Electrostatic transducers. Marcel Hervé. 33: 1440—1961
Electrostrictive ceramics comprising a principal component of barium titanate. 33: 390—1961
High-fidelity sound translating apparatus. John A. Victoreen. 33: 1440—1961
Magnetostrictive resonator mounting. Frederick Leonard and Floyd B. Craig. 33: 389—1961
Piezoelectric ultrasonic transducer. Richard D. McGunigle. 33: 556—1961
Sonic transducers for fluid mediums. James P. O'Neill. 33: 124—1961
Sound signaling system having a variable reluctance transmitter-condenser receiver transducer. John S. Hickman and Gordon E. Martin. 33: 556—1961
System for monitoring and controlling the motion of a sound source. Edith L. R. Corliss, Mahlon D. Burkhard, and Walter Koidan. 33: 721—1961
Transducer and vibratory diaphragm. Hugh G. Knowles. 33: 1159—1961
Transducing devices. George S. Cherniak. 33: 390—1961

ERRATA
Hypersonic resonance of quartz at 3500 Mc. James L. Stewart and Ellen S. Stewart. 33: 1147—1961

5.18m Magnetic Transducers: Magnetostriction

PAPERS
Improved nickel-base alloys for magnetostrictive transducers. C. A. Clark. 33: 930—1961
Resonant displacement of nickel and permendur magnetostrictors under static compressive stress. Roy R. Whymark and James M. Witting. 33: 1720—1961
Utilization of magnetostrictive materials in generating intense sound. R. R. Whymark. 33: 725—1961

LETTERS TO THE EDITOR
Effect of high coupling coefficient on the performance of a magnetostrictive transducer used as both a projector and a hydrophone. G. L. Wilson and P. M. Kendig. 33: 966—1961

ABSTRACTS
Magnetostrictive delay lines. Arthur Rothbart. 33: 1657—1961
PATENTS
Method of transducer manufacture. Wilbur T. Harris. 33: 987—1961
Transducer. Wilbur T. Harris and Philip B. Edwards. 33: 124—1961
Transducer construction. Wilbur T. Harris. 33: 124—1961

5.18p Piezoelectric Transducer, Ferroelectrics

PAPERS
Dynamic tensile strength of a ferroelectric ceramic. Robert Gerson, S. R. Burlage, and Don Berlincourt. 33: 1483—1961
Effects of high static stress on the piezoelectric properties of transducer materials. H. H. A. Krueger and Don Berlincourt. 33: 1339—1961
Piezoelectric generation of an electrical impulse. M. Redwood. 33: 1386—1961
Transient performance of a piezoelectric transducer. M. Redwood. 33: 527—1961
LETTERS TO THE EDITOR
Comment on monograph by S. A. Basri. Walter G. Cady. 33: 249—1961
ABSTRACTS
Achieving deep-water capability with free-flooding piezoelectric transducers. W. J. Marshall and T. F. Hueter. 33: 1681—1961
Composite spherical sonar transducers. Charles E. Green. 33: 1651—1961
Depletion layer high-frequency transducers. D. L. White. 33: 1654—1961
Method for the pressure calibration of pulse operated ultrasonic transducers. William W. Lester. 33: 857—1961
Resonant vibrations of ceramic rectangular bar transducers. E. Larry Fabian. 33: 1658—1961
Underwater exponential horn transducer. D. Worth Duderstadt and A. F. Wittenborn. 33: 1651—1961
Zero shift in piezoelectric transducers. Hartley J. Jensen. 33: 848—1961
SUBTITLES
Sensitivity of ADP transducers as function of temperature. Ward L. Paine. 33: 816(L)—1961
Ultrasonic field from a Y-cut quartz transducer. Richard F. Weeks. 33: 747—1961
PATENTS
Method of polarizing transducers. Ulf G. Hansell. 33: 1812—1961

5.19 Tuning Forks

PATENTS
Apparatus for maintaining constant the vibration frequency of a tuning fork. William P. Asten. 33: 1648—1961
Tuning fork frequency standard having a blocking coil in energizing circuit. James G. Sears. 33: 1648—1961
Tuning fork oscillator. Boris F. Grib. 33: 1648—1961
Tuning vibratory elements. Henry P. Birkemeier. 33: 1648—1961

5.20 Tone and Wave Synthesizers

SUBTITLES
Sound synthesizer. Harry F. Olson and Herbert Belar. 33: 1168—1961

5.21 Vibration Devices. Devices for Generating or Damping Vibrations. (See also 12., 12.3, 12.3i, 12.3p, and 12.3v.)

PATENTS
Device for maintaining mechanical oscillations. Adrianus Johannes Wilhelmus Marie von Overbeek. 33: 390—1961

6. Musical Instruments and Music

6.1 General, Unclassified

PAPERS
Aid to music composition employing a random probability system. Harry F. Olson and Herbert Belar. 33: 1163—1961
Psychophysical comparison of just tuning and equal temperament in sequences of individual tones. W. D. Ward and D. W. Martin. 33: 586—1961
ABSTRACTS
Measurement of the musical interval sense. Andrew G. Pikler and J. Donald Harris. 33: 862—1961
Supplementary sound for opera. Dino Yannopoulos, Daniel W. Martin, and David W. Martin. 33: 1652—1961
PATENTS
Combination chord, interval, scale, and scale degree indicator. Sebastian J. Calabro. 33: 556—1961
Musical tops. Ludwig Bruetting. 33: 124—1961
NEWS
Interim report and newsletter of Technical Committee on Musical Acoustics. 33: 1151—1961

6.2 Bells, Xylophones. Other Instruments Having Rigid Vibrators

PATENTS
Drive and guiding means for disk actuated music comb. Theodore R. Duncan. 33: 556—1961
Musical toy. Joseph V. Ventura. 33: 556—1961
Music comb with weighted cantilever. Theodor R. Duncan. 33: 1160—1961
Toy musical instrument and actuating mechanism therefor. Charles J. Merchant. 33: 721—1961

6.3 Brass Wind Instruments (lip vibrated)

LETTERS TO THE EDITOR
Smoothly and step tapered structures. Frederick J. Young and Beverly H. Young. 33: 813—1961

6.4 Drums and Other Membranophonic Instruments

PAPERS
Comparison of the acoustical performance of calfskin and plastic drumheads. Howard C. Hardy and James E. Ancell. 33: 1391—1961

6.5 Pipe Organs

ABSTRACTS
Attenuation of pipe-organ tone by swell shutters. Albert Meyer and William C. Wayne, Jr. 33: 1652—1961
Electroacoustic tone source extending into the infrasonic range. R. K. Duncan and J. L. Stein. 33: 1653—1961

6.6 Pianos and Other Keyboard Stringed Instruments

PAPERS
Subjective evaluation of musical scale temperament in pianos. D. W. Martin and W. D. Ward. 33: 582—1961
LETTERS TO THE EDITOR
Piano sounding-board vibration. Benjamin F. Miessner. 33: 539—1961
ABSTRACTS
Excitation of string instruments. Melville Clark, Jr., Daniel Schwartz, and William Feldman. 33: 862—1961
PATENTS
Guitar tailpiece. Ralph Matteo. 33: 987—1961
Piano flanges. Julius Schwarzbaur. 33: 1812—1961
String tension controlling means for lute-type instrument. Clarence L. Fender. 33: 988—1961
System for classroom instruction in playing keyboard-type instruments. Erdman H. Johnson. 33: 1813—1961

6.7 Violin Family. Stringed Instruments Except Keyboard Type

ABSTRACTS
Excitation of string instruments. Melville Clark, Jr., Daniel Schwartz, and William Feldman. 33: 862—1961

PATENTS
Adjustable nut for fretted stringed musical instruments. Donald S. Porter. 33: 557—1961
Device for retaining viol type instrument peg in position. Walter C. Wheeler. 33: 125—1961
End-rest foot-assembly for violoncellos, bass viols and the like. Thomas L. Fawick. 33: 1160—1961
Floating tremolo and bridge construction for lute-type musical instruments. Clarence L. Fender. 33: 1160—1961
Guitar. Clarence L. Fender. 33: 721—1961
Individual string tone changer for guitars. Thomas B. Turman. 33: 124—1961
Magnetic pickups. Rudolph Dopera and Edward E. Dopera. 33: 1160—1961
Pick for metallic stringed instruments. Edward F. Meola. 33: 721—1961
Pickup means for stringed instruments. Luther R. Ritchie. 33: 1440—1961
Slide Hawaiian guitar. Gerald W. Toop. 33: 557—1961
Sound pickup device for stringed instruments. James D. Webster. 33: 557—1961
Stringed musical instrument. David D. Bunker. 33: 1813—1961
Stringed musical instruments having a plastic housing. Clair Omar Musser. 33: 1160—1961
Tailpiece retainer for stringed instruments. Frank Passa. 33: 1160—1961
Tuning attachment for stringed instruments. Gary S. Popkin. 33: 721—1961
Tuning means for stringed instruments. David Oopa. 33: 721—1961
Tuning peg adjusting mechanism. Philip D. Braverman. 33: 557—1961
Violin. Robert L. Hornseth. 33: 1282—1961

6.8 Wood Winds

PAPERS
Vibrations of the reed and the air column in the clarinet. John Backus. 33: 806—1961

ABSTRACTS
Behavior and properties of clarinet reeds. John Backus. 33: 1652—1961
Influence of the reed on the vibration frequency of clarinet tones. John Backus. 33: 862—1961

PATENTS
Electrical amplification to woodwind musical instruments. George Barron. 33: 1440—1961

6.9 Electrical Musical Instruments

ABSTRACTS
Aid to music composition employing a random-probability system. Harry F. Olson and Herbert Belar. 33: 862—1961
Electroacoustic tone source extending into the infrasonic range. R. K. Duncan and J. L. Stein. 33: 1653—1961
Electronic organ ensemble by means of "optimum generator utilization." Albert Meyer. 33: 1653—1961
Hamograph: a new amplitude-rhythm control device for the production of electronic music. Myron Schaeffer. 33: 861—1961
New tool for the exploration of unknown sound resources for composers. Harald Bode. 33: 861—1961
Panoramic tone enhancement system. A. J. Bissonette, J. B. Brombaugh, and E. M. Jones. 33: 1653—1961
Supplementary sound for opera. Dino Yannopoulos, Daniel W. Martin, and David W. Martin. 33: 1652—1961

PATENTS
Circuit for tuning oscillators of an electronic musical instrument. Jerome Markowitz. 33: 1814—1961
Combined piano and electrical monophonic instrument. John M. Hanert. 33: 1813—1961
Electromagnetic pickup for lute-type musical instruments. Clarence L. Fender. 33: 1282—1961
Electronic acoustical stringed instrument. Harold B. Newton. 33: 391—1961
Electronic musical instrument having voltage sensitive frequency variation means. Paul B. Oncley. 33: 1814—1961
Keying means for the selective control of a tone. Richard H. Peterson. 33: 391—1961
Magnetic tape sound reproducing musical instrument. Harry C. Chamberlin. 33: 1814—1961
Oscillators and circuitry for a musical instrument with rapid starting characteristics. John H. Hanert and Donald R. Kern. 33: 1813—1961
Photoelectric apparatus for generating musical tones. Melville Clark, Jr. 33: 1815—1961
Photoelectric scanning device for generating musical tones. Melville Clark, Jr. 33: 1814—1961
Piano action. Clifford Andersen. 33: 1813—1961
Playing key switch. Merton D. Corwin. 33: 1813—1961
Push-button chord derivation and apparatus. Philip C. Johnson. 33: 721—1961
Progressively keyed electrical musical instrument. Melville Clark, Jr. 33: 1815—1961
Tone-generating apparatus. Benjamin F. Miessner. 33: 1813—1961

6.10 Reed Organs. Accordions, Harmonicas

PATENTS
Accordion. Karl Scherer. 33: 125—1961
Accordion converter. Oscar M. Loeffelholz. 33: 1282—1961
Movable convertor for the bass mechanism of an accordion. Emil Baldoni. 33: 1160—1961
Reed organ. Eli D. Czarnecki. 33: 1815—1961

6.11 Singing—Vibrato. (Changed from 9.9 beginning 1961.)

PAPERS
Analyses of soprano voices. Alf Bjørklund. 33: 575—1961

7. Noise

7.1 General, Unclassified

PAPERS
Normalized representation of noise-band masking and its application to the prediction of speech intelligibility. Shuzo Saito and Shingo Watanabe. 33: 1013—1961
On the vibration statistics of a randomly excited hard-spring oscillator. II. Richard H. Lyon. 33: 1395—1961
Operating characteristics, signal detectability, and the method of free response. James P. Egan, Gordon Z. Greenberg, and Arthur I. Schulman. 33: 993—1961
Response of hard-spring oscillator to narrow-band excitation. Richard H. Lyon, Manfred Heckl, and C. Brian Hazelgrove. 33: 1404—1961
Response of strings to moving noise fields. Gideon Maidanik and Richard H. Lyon. 33: 1606—1961
Temporary threshold shifts from tones and noise bands of equivalent rms sound-pressure level. Paul O. Thompson and Robert S. Gales. 33: 1593—1961
Use of delta function for the correlations of pressure fields. Gideon Maidanik. 33: 1598—1961

ABSTRACTS
Acoustic response of a rectangular cavity excited by a moving airstream. L. W. Lassiter, H. E. Plumblee, and J. S. Gibson. 33: 850—1961
Improved instrumentation for impulse noise analysis. George J. Harbold and James W. Greene. 33: 853—1961
Masking of pulsed tones by bands of noise. Arnold M. Small, Jr., and Richard A. Campbell. 33: 1655—1961

Short-time aftereffects of noise on auditory nerve responses. W. T. Peake and J. F. Buoncristiani. 33: 1670—1961

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Air Force reports on sound and noise. 33: 1153—1961

7.2 Annoyance

ABSTRACTS

Psychopathologic mechanisms in aversive responses to noise. Peter F. Ostwald. 33: 859—1961

NEWS

What is the most annoying noise? 33: 541—1961

7.3 Audiograms of Noise

ABSTRACTS

Application of a blowdown wind tunnel for large scale acoustic environmental testing. William H. Mayes and Philip M. Edge, Jr. 33: 846—1961

7.4 City Noise

ABSTRACTS

Propagation of train noise and adjacent land use. G. J. Thiessen and T. F. W. Embleton. 33: 1676—1961

7.6 Noise in Buildings. (See also 2.2.)

PAPERS

Liveness effects on the intelligibility of noise-masked speech. P. O. Thompson, J. C. Webster, and R. S. Gales. 33: 604—1961

7.7 Machinery Noise. Mufflers. Noise Silencers

PAPERS

Notes on scaling jet and rocket noise. David A. Bies and Peter A. Franken. 33: 1171—1961

ABSTRACTS

Light considerations in the design and operation of the supersonic transport. Harvey H. Hubbard and Domenic J. Maglieri. 33: 845—1961

New jet engine noise suppressor. R. N. Lane, E. E. Mikeska, and C. D. Anderson. 33: 1683—1961

Noise and vibration measurements of a large ventilating fan for various degrees of vibration isolation. Laymon N. Miller. 33: 861—1961

Noise levels due to trains. T. F. W. Embleton and G. J. Thiessen. 33: 1676—1961

On the problem of sound reduction in vehicles. C. Betzold. 33: 847—1961

Propagation of train noise and adjacent land use. G. J. Thiessen and T. F. W. Embleton. 33: 1676—1961

Sonic block silencing for axial and screw type compressors. J. A. Sobel, III, and A. D. Welliver. 33: 845—1961

Sound power measurements on a competitive group of current room air conditioners. Warren E. Blazier, Jr. 33: 846—1961

PATENTS

Air cleaner and silencer assembly. William F. Thornburgh. 33: 827—1961

Air-cleaner-silencer assembly. Wesley W. McMullen. 33: 1161—1961

Cleaner silencer assembly. John D. McMichael. 33: 1161—1961

Combination augmenter, sound suppressor and thrust reverser for jet engines. Constant V. David and John W. Baxter. 33: 1161—1961

Combination noise suppressor and thrust reverser. John M. Tyler, Eric S. Hope, and Maxon A. Logsdon. 33: 390—1961

Combination sound-deadening and gas-purifying apparatus. Meral O. Miller, James L. Matheny, and Raymond L. Scott. 33: 826—1961

Combination thrust augmenter, sound suppressor and thrust reverser for jet engines. John W. Baxter. 33: 827—1961

Combined spark arrestor and muffler for internal combustion engines. Frank R. Gill. 33: 392—1961

Dynamical muffler. Konstantin F. Harchikov. 33: 391—1961

Engine muffler. Adolph R. Hendry. 33: 262—1961

Exhaust muffler. Charles E. Nelson. 33: 262—1961

Gas intake silencer. Golden A. Moyer. 33: 826—1961

Ground exhaust noise suppressors. John M. Tyler and George B. Towle. 33: 392—1961

Jet engine noise reducer. Albert G. Bodine, Jr. 33: 988—1961

Jet noise suppressor. Axel L. Highberg. 33: 393—1961

Jet noise suppressor nozzle. Frederick William Walton Morley. 33: 988—1961

Means and techniques for silencing sound energy. Cloyd D. Smith and Robert L. Mathews. 33: 393—1961

Method and apparatus for suppressing acoustic detonation phenomena in internal combustion engines by ion reaction. Albert G. Bodine. 33: 1161—1961

Muffler. Porter K. Bennett. 33: 826—1961

Muffler. Stephen J. Gibel. 33: 1161—1961

Muffler. Leonard M. Morrish and Lloyd E. Muller. 33: 989—1961

Muffler. Walter H. Powers. 33: 262—1961

Muffler and collecting ring assembly for radial engines. Meral O. Miller and James L. Matheny. 33: 392—1961

Muffler for internal combustion engines. Klaus Frederick Nowak. 33: 262—1961

Muffler for silencing gases. Josef Ernst. 33: 393—1961

Muffler for use with catalysts in internal combustion engines. Frank Gentile. 33: 988—1961

Muffler repair kit. Bernard O. Overland. 33: 827—1961

Noise abatement means. Ernest N. Poulos. 33: 825—1961

Noise reducing arrangement for use in clothes dryers. Eugene G. Olthuis. 33: 125—1961

Noise suppressor. Axel L. Highberg and John M. Tyler. 33: 391—1961

Noise suppressor and thrust reverser. William H. Cook, Jr. 33: 825—1961

Portable sound suppressors for aircraft jet engines. Conrad J. Morgan. 33: 989—1961

Pressure converters for noise-generating gases. Hans Carl Leistritz. 33: 261—1961

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7.8 Noise Generators, Sirens

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7.9 Noise of Animals, Biological Noise. (See also 13.9.)

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7.10 Aerodynamic Noise, Jet Noise

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8.1 General, Unclassified

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9. Speech Communication. (Revised 1961.)

9.0 Speech Communication

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9.5 Perception of Speech and Speechlike Sounds

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9.6 Measures of Speech Intelligibility, Quality Information Content

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9.8 Systems for Speech Transmission, Analysis-Synthesis Telephony, Speech Coding

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10. Ultrasonics (Supersonics)

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10.3 Ultrasonic Instruments. (See also 5.18.)

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10.4 Gases, Ultrasonic Velocities, Dispersion, and Absorption. (See also 11.3.)

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10.6 Solids, Ultrasonic Velocities, Dispersion, and Absorption

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